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Glossary of Terms

The following terms are used in this manual. To better understand the information presented in the manual you should familiarize yourself with these terms.

100Base-TX - Twisted pair cabling used in an Ethernet network. This cable type connects to the Scorer Computer(s) and Control desk computer(s) to allowing them to communicate. Also refer to the Ethernet Switch.

Distribution PCB - A circuit board located behind the pin camera on each lane pair that handles the camera power, machine on/off, machine reset, foul signals, and ball detector signals.

Ethernet - A protocol that specifies how computers send information to one another.

Ethernet Switch - Device that is the central point of connection for the scorer computer(s) and Control desk computer(s) in the Ethernet network. The Switch allows data to be sent/received at full transmission speeds. Also refer to 100Base-TX.

Hard Drive - A computer's primary storage device. The hard drive contains the programs and files that make the computer function.

LCD Interface - A optional circuit board in the Scorer Computer that adapts the scoresheet video so that it can be displayed on the lower flatscreen displays

Microprocessor - A circuit chip that performs most of the calculations and processing of information for a computer.

Motherboard - A circuit board inside a Scorer Computer or Control Desk Computer that contains the microprocessors and memory. The hard drives and most of the other PCBs in the computer connect to this board. (Also referred to as the System Board).

PCI Bus - Peripheral Component Interface Bus - A design or protocol used in many computers that defines how circuit boards connect to and use the resources provided by the motherboard. These are the medium sized, white colored slot connectors on the motherboard. The Ethernet and Video3 PCBs connect to the motherboard through these slots.

Power Supply - An assembly located inside a computer that provides power to the components inside the computer.

Primary Patch Panel - A circuit board mounted on the inside side wall of the Scorer Computer that provides connections and surge protection for the overhead monitor's video and the communication from the Keypad or Touchscreen and Distribution PCB or GS Pinsetter. The primary patch panel has connections for up to 8 lanes.

RAM (Random Access Memory) - A short term storage area for information in a computer. Most computers have this type of memory installed on small circuit boards called DIMMs.

Video3 PCB - A multifunctional circuit board located in a Scorer Computer. This board processes and controls the video for the overhead monitors, processes the video received from the pin cameras, and provides communication for the pinsetters (Distribution PCB), and communication and audio control for the scoring consoles

If LCD touchscreens are installed a second Video3 PCB is installed to process the video the lower screens.

Scorer Computer - Computer(s) located at the curtain wall that control the scoring functions for a up to 8 lanes.

Secondary Patch Panel - An optional circuit board mounted on the inside side wall of the Scorer Computer that provides connections and surge protection for the lower LCD video. The Secondary Patch Panel has connections for 8 lanes.

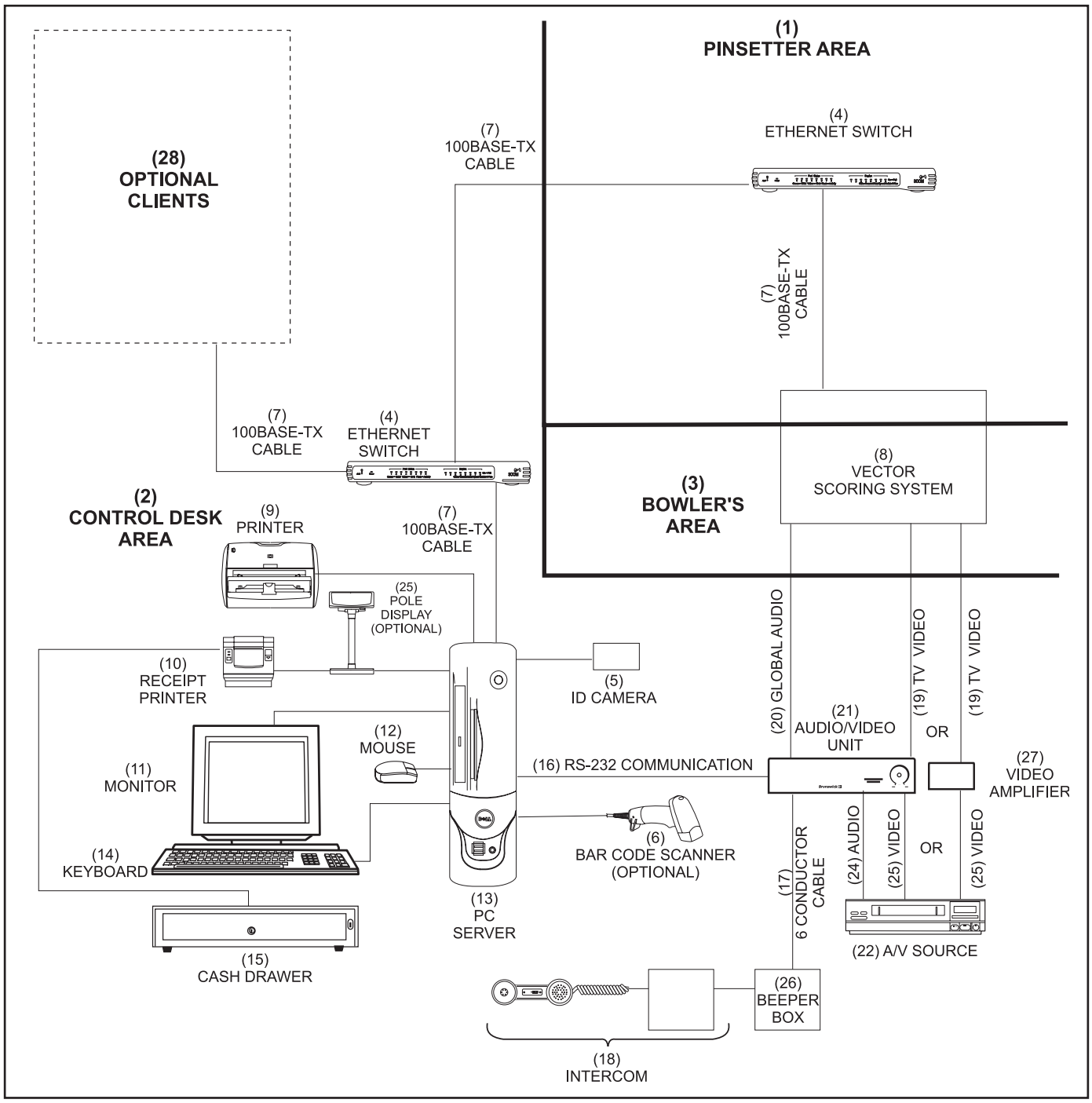
Vector Network System Overview

The control desk is available in two configurations; Vector and Vector Plus. The Vector Control system includes a high speed computer, complete with a keyboard, mouse, display monitor and printer. The computer provides the bowling center the ability to control bowling activity from a remote location, keep track of the financial transactions, and manage league and tournaments. Additional optional computers can be connected to the system as needed.

The cash drawer, receipt printer and pole display connected to the computer provide point of sale (POS) capability. Reference the figure titled *Vector Control Desk.*

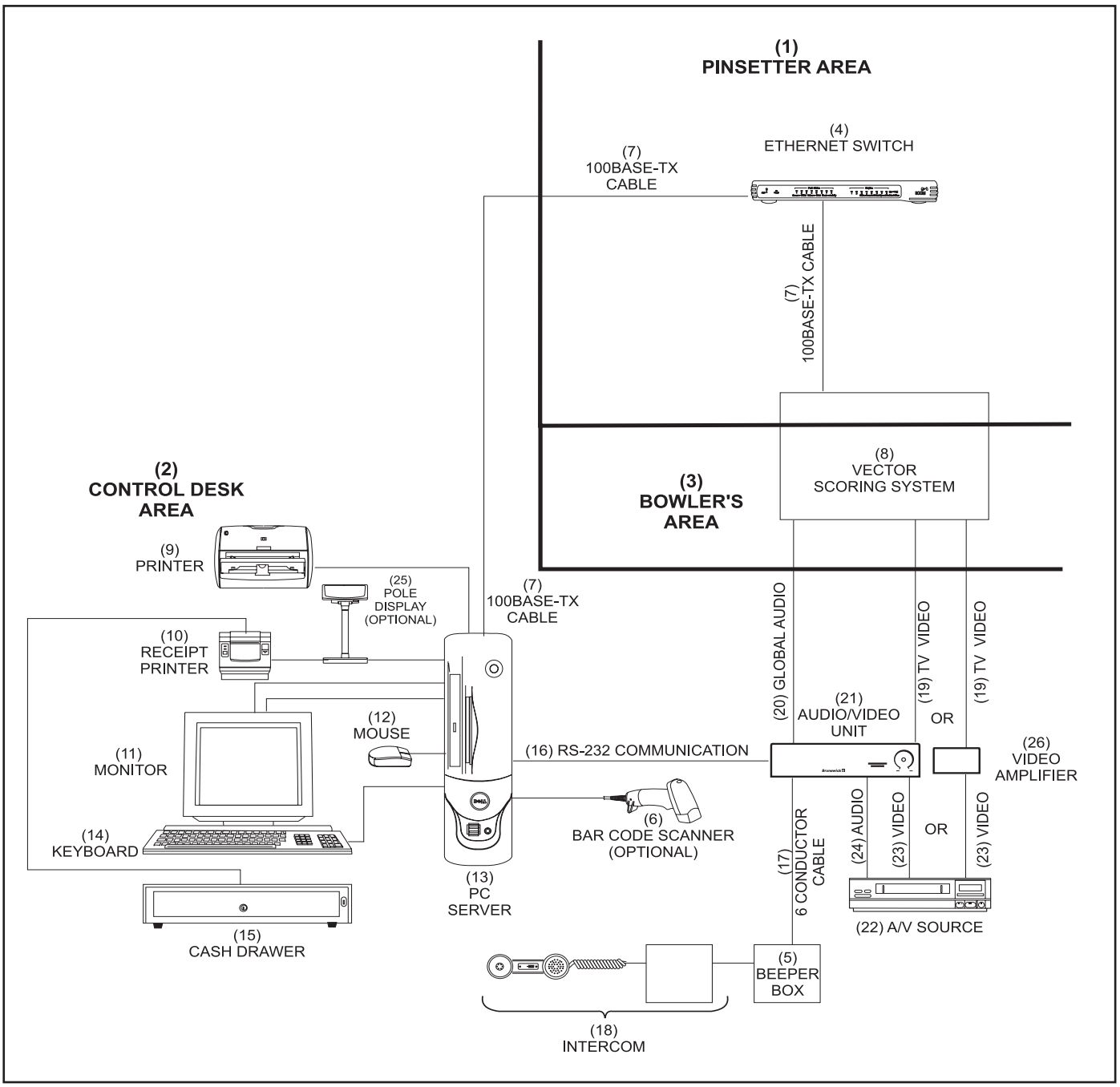
Like the Vector system, Vector Plus consists of one or more computers and POS assemblies located at the control desk, and in some cases, a computer in the office. The Vector Plus also provides the bowling center personnel convenient control of the scoring system while keeping track of the financial transactions and bowling activity in the center. In addition it allows the center additional security control for the system as well as an advance tracking of activity.

Refer to figures titled *Vector Plus Configuration 1, Vector Plus Configuration 2, Vector Plus Configuration 3,* and *Vector Plus*



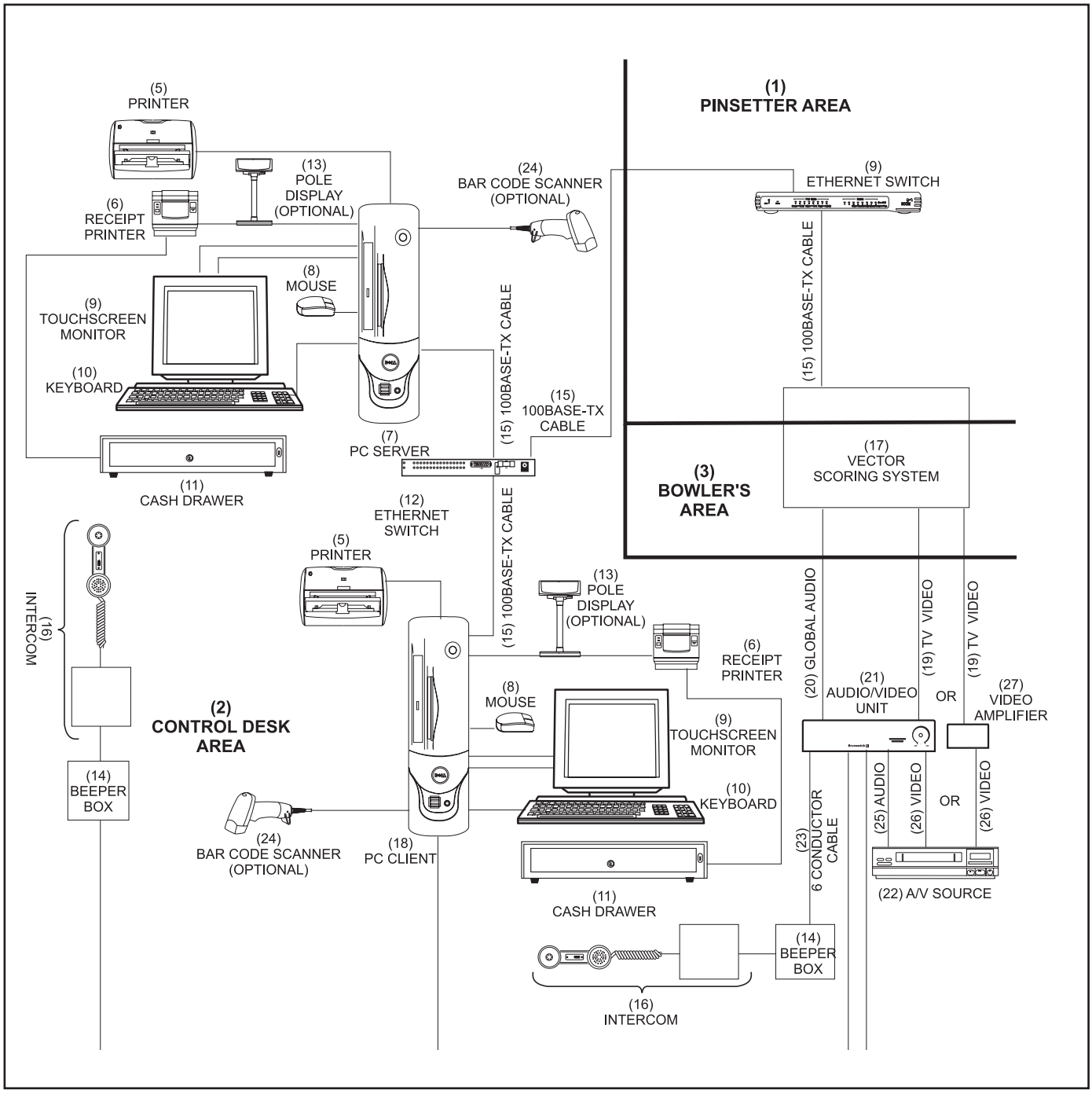
Vector Control Desk

(1) PINSETTER AREA
(2) CONTROL DESK AREA
(3) BOWLER'S AREA
(4) ETHERNET SWITCH
(5) ID CAMERA
(6) BAR CODE READER OPTIONAL
(7) 100 BASE-TX CABLE
(8) VECTOR SCORING SYSTEM
(9) PRINTER
(10) RECEIPT PRINTER
(11) MONITOR
(12) MOUSE
(13) PC SERVER
(14) KEYBOARD
(15) CASH DRAWER
(16) RS-232 COMMUNICATION
(17) 6 CONDUCTOR CABLE
(18) INTERCOM
(19) TV VIDEO
(20) GLOBAL AUDIO
(21) AUDIO/VIDEO UNIT
(22) AUDIO / VIDEO SOURCE
(23) VIDEO
(24) AUDIO
(25) POLE DISPLAY
(26) BEEPER BOX
(27) VIDEO AMPLIFIER
(28) OPTIONAL CLIENTS



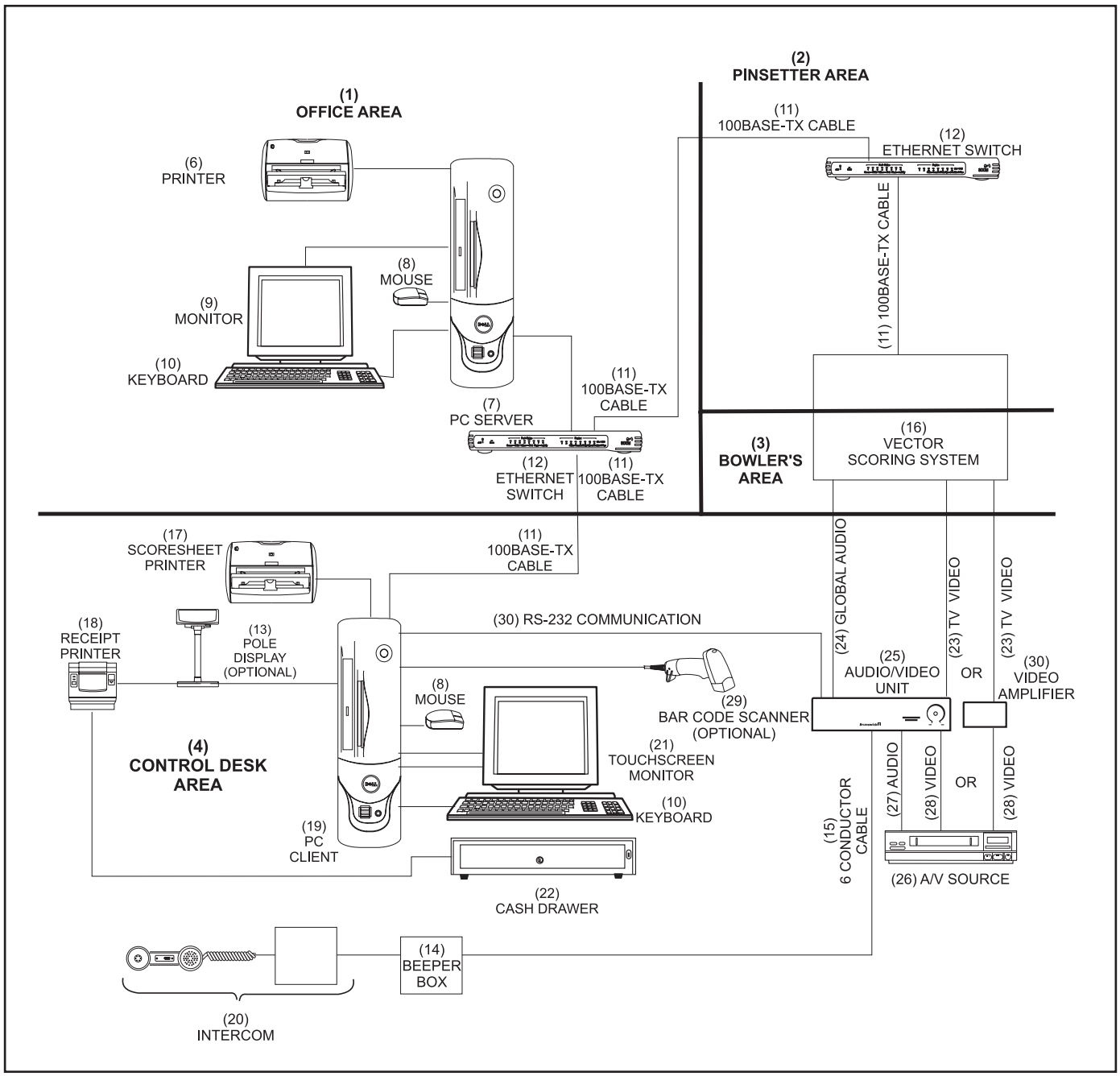
Vector Plus Configuration 1

(1) PINSETTER AREA
(2) CONTROL DESK AREA
(3) BOWLER'S AREA
(4) ETHERNET SWITCH
(5) BEEPER BOX
(6) BAR CODE READER OPTIONAL
(7) 100 BASE-TX CABLE
(8) VECTOR SCORING SYSTEM
(9) PRINTER
(10) RECEIPT PRINTER
(11) TOUCHSCREEN MONITOR
(12) MOUSE
(13) PC SERVER
(14) KEYBOARD
(15) CASH DRAWER
(16) RS-232 COMMUNICATION
(17) 6 CONDUCTOR CABLE
(18) INTERCOM
(19) TV VIDEO
(20) GLOBAL AUDIO
(21) AUDIO/VIDEO UNIT
(22) AUDIO / VIDEO SOURCE
(23) VIDEO
(24) AUDIO
(25) POLE DISPLAY
(26) VIDEO AMPLIFIER



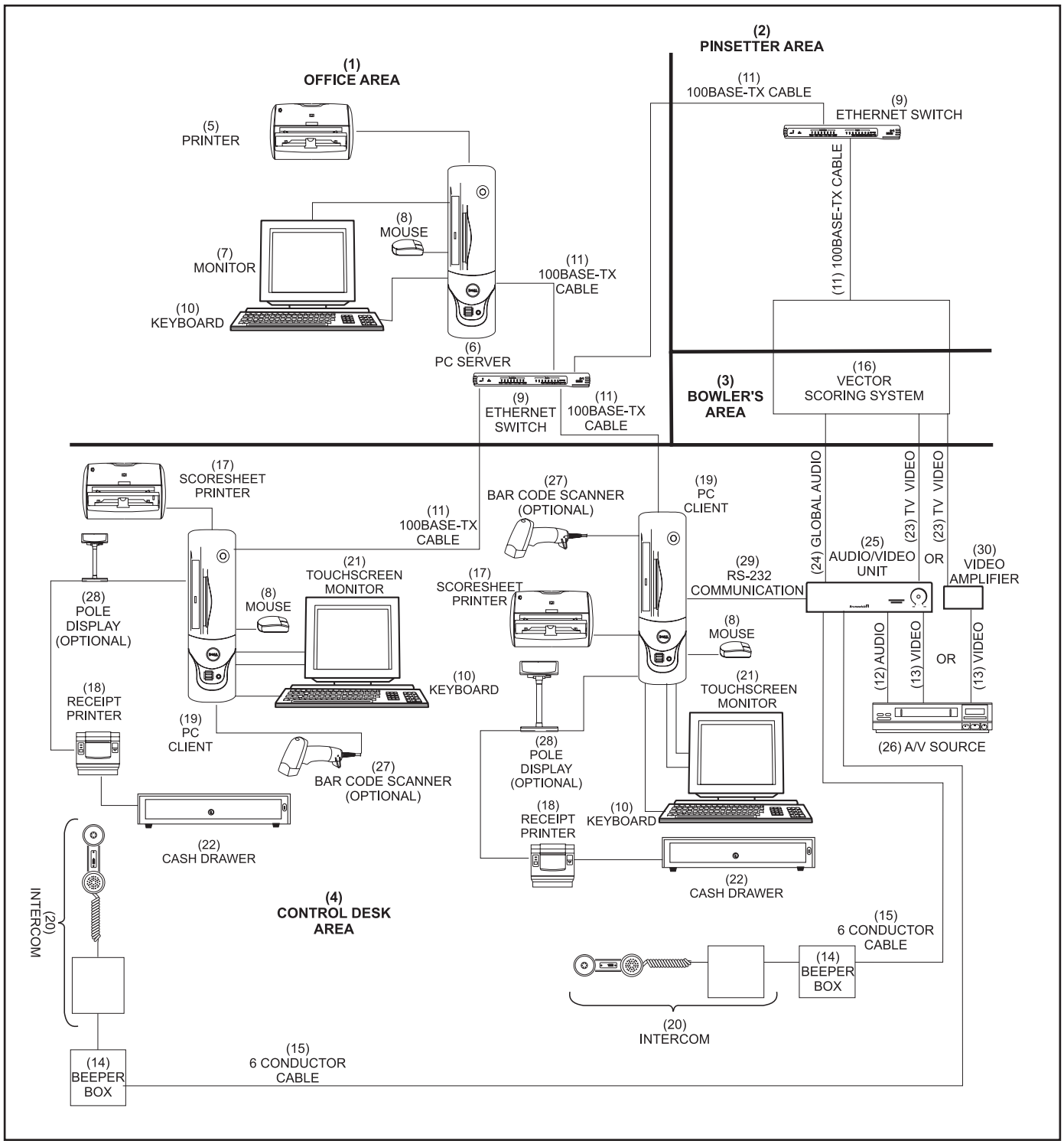
Vector Plus Configuration 2

(1) PINSETTER AREA
(2) CONTROL DESK AREA
(3) BOWLER'S AREA
(4) RS-232 COMMUNICATION
(5) PRINTER
(6) RECEIPT PRINTER
(7) PC SERVER
(8) MOUSE
(9) MONITOR
(10) KEYBOARD
(11) CASH DRAWER
(12) ETHERNET SWITCH
(13) POLE DISPLAY (OPTIONAL)
(14) BEEPER BOX
(15) 100 BASE-TX CABLE
(16) INTERCOM
(17) VECTOR SCORING SYSTEM
(18) PC CLIENT
(19) TV VIDEO
(20) GLOBAL AUDIO
(21) AUDIO/VIDEO UNIT
(22) AUDIO / VIDEO SOURCE
(23) 6 CONDUCTOR CABLE
(24) BAR CODE READER (OPTIONAL)
(25) AUDIO
(26) VIDEO
(27) VIDEO AMPLIFIER



Vector Plus Configuration 3

(1) OFFICE AREA
(2) PINSETTER AREA
(3) BOWLER'S AREA
(4) CONTROL DESK AREA
(5) RS-232 COMMUNICATION
(6) PRINTER
(7) PC SERVER
(8) MOUSE
(9) MONITOR
(10) KEYBOARD
(11) 100BASE-TX CABLE
(12) ETHERNET SWITCH
(13) POLE DISPLAY (OPTIONAL)
(14) BEEPER BOX
(15) 6 CONDUCTOR CABLE
(16) VECTOR SCORING SYSTEM
(17) SCORESHEET PRINTER
(18) RECEIPT PRINTER
(19) PC CLIENT
(20) INTERCOM
(21) TOUCHSCREEN MONITOR
(22) CASH DRAWER
(23) TV VIDEO
(24) GLOBAL AUDIO
(25) AUDIO/VIDEO UNIT
(26) AUDIO / VIDEO SOURCE
(27) AUDIO
(28) VIDEO
(29) BAR CODE READER OPTIONAL
(30) VIDEO AMPLIFIER



Vector Plus Configuration 4

(1) OFFICE AREA
(2) PINSETTER AREA
(3) BOWLER'S AREA
(4) CONTROL DESK AREA
(5) PRINTER
(6) PC SERVER
(7) MONITOR
(8) MOUSE
(9) ETHERNET SWITCH
(10) KEYBOARD
(11) 100BASE-TX CABLE
(12) AUDIO
(13) VIDEO
(14) BEEPER BOX
(15) 6 CONDUCTOR CABLE
(16) VECTOR SCORING SYSTEM
(17) SCORESHEET PRINTER
(18) RECEIPT PRINTER
(19) PC CLIENT
(20) INTERCOM
(21) TOUCHSCREEN MONITOR
(22) CASH DRAWER
(23) TV VIDEO
(24) GLOBAL AUDIO
(25) AUDIO/VIDEO UNIT
(26) AUDIO / VIDEO SOURCE
(27) BAR CODE READER (OPTIONAL)
(28) POLE DISPLAY (OPTIONAL)
(29) RS-232 COMMUNICATION
(30) VIDEO AMPLIFIER

Vector Computers

Both the Vector and Vector Plus Systems use Dell computers for the server and client computers. The specific Dell model and the Windows operating system installed on the computer depends on when the computer was installed and whether it is used as the server or client computer. The server computer may have a Windows 2000 or 2003 server operating system installed while the clients may use Windows 2000 Workstation or Windows XP operating systems. Additional information for your specific Dell computer can be found at their website www.Dell.com.

WARNING!
Each computer is designed for universal input voltage which means it can operate with an input of 115 VAC or 230 VAC.

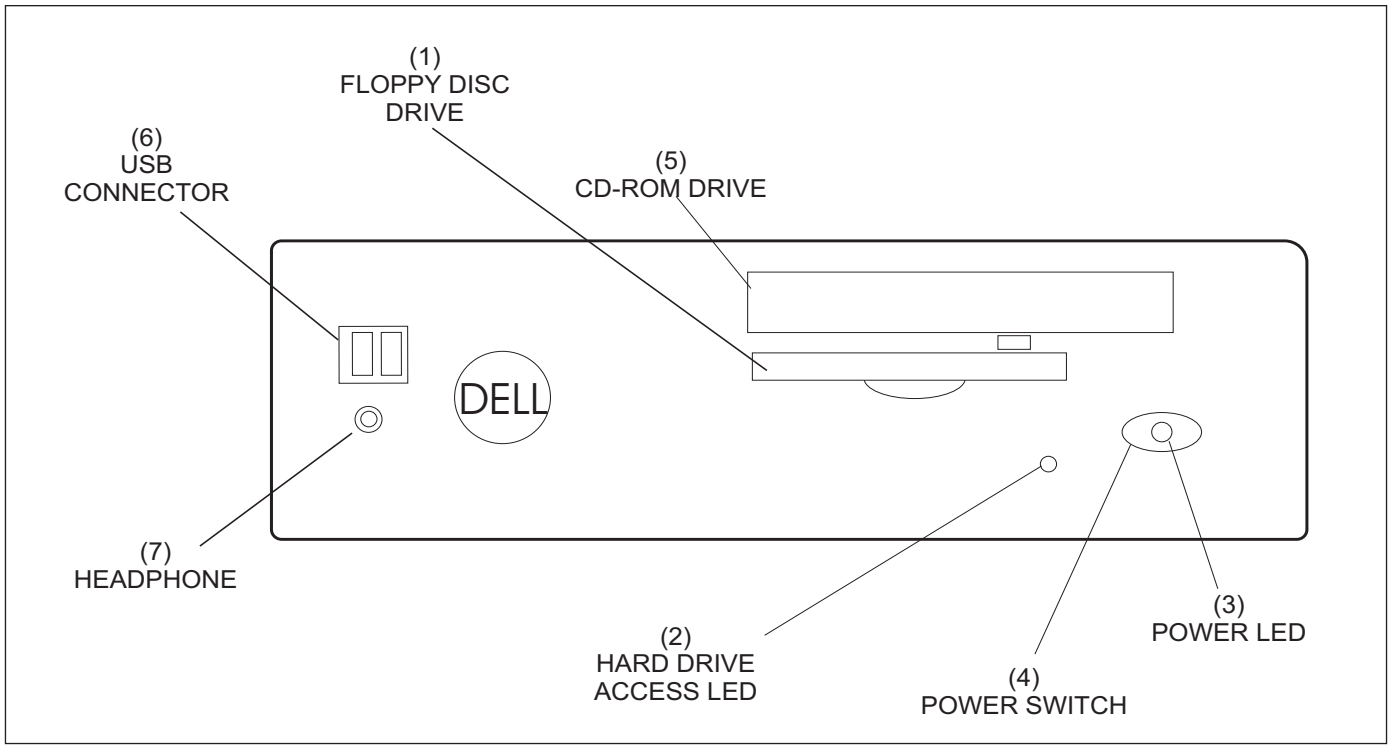
Although operating voltage is normally set when the computer is installed, it may be necessary to configure it when replacing the computer. To select the voltage, simply slide the selector switch located on the back of the computer near the power input receptacle, so the desired voltage can be read on the selector. Refer to the figure titled *Rear Panel Connectors and Voltage Switch* shown later in this section.

The location of the computer depends on the bowling center's needs. (All installations will have at least one computer located at the control desk.) For Vector systems the server computer is normally located at the control desk. For Vector Plus systems it may be located in an office or at the control desk.

The operating procedures and optional programs loaded onto the computers differ between the Vector and Vector Plus systems. Refer to your Vector system user guide for specific operating information.

Connections

Despite the different models used for the server and client computers, they all contain standard connections for power, keyboard, mice, display monitor, printer, external devices, and network communication. The front of the computer contains typical controls and indicators found on most computers. Refer to figures titled *Typical Front Panel Connectors and Controls* and *Typical Rear Panel Connectors and Voltage Select Switch*



Typical Front Panel Connectors and Controls

Front Panel Connectors and Controls

Functions of the components on the front of the computer may include:

(1) Floppy Disk Drive - Diskette drive used to load software updates. Newer computers do not contain a floppy drive.

(2) Hard Disk Drive Activity LED - Lights when the hard disk drive or CD Drive is in use.

(3) Power LED - This Light indicates the state of the computer.

No light - The computer is in the off state.
Steady green - The computer is in a normal operating state.
Blinking green - The computer is in a power-saving state.

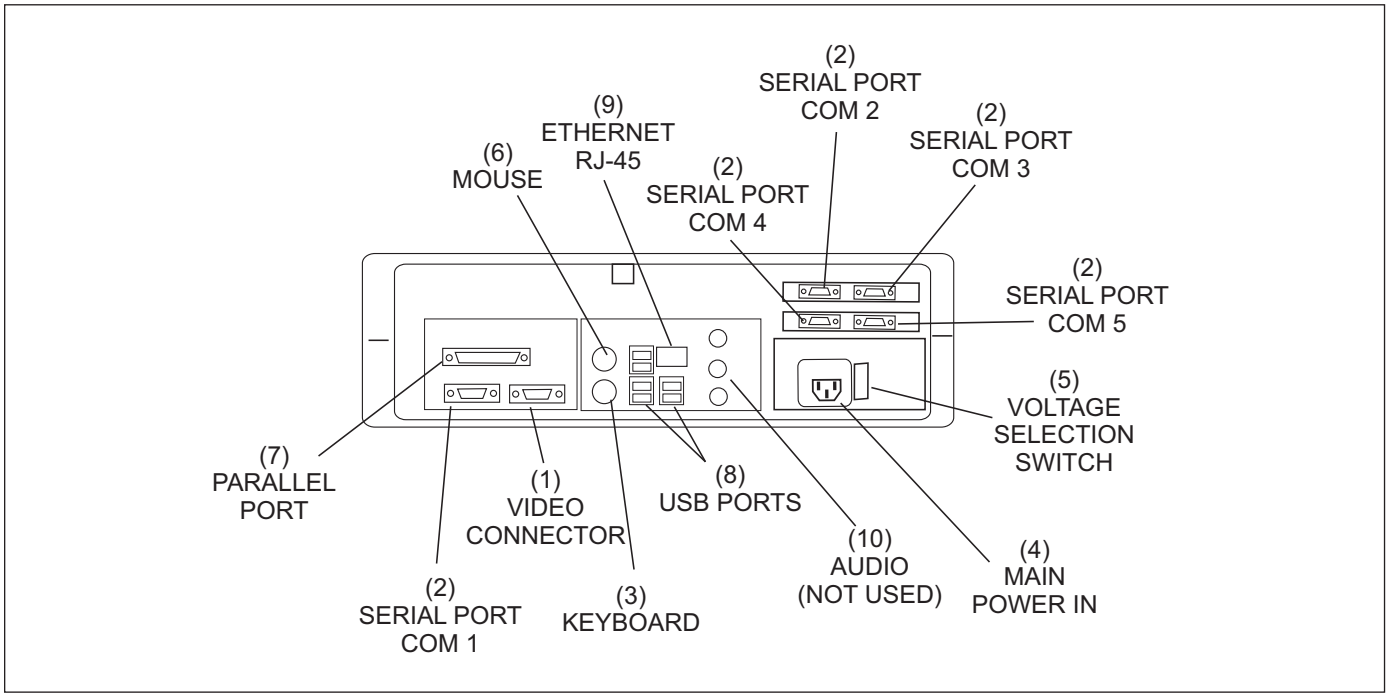
(4) Power Switch - Press This button to turn the computer on and off.

(5) CD-ROM/DVD Drive - Drive used to load programs from CD-ROM disks.

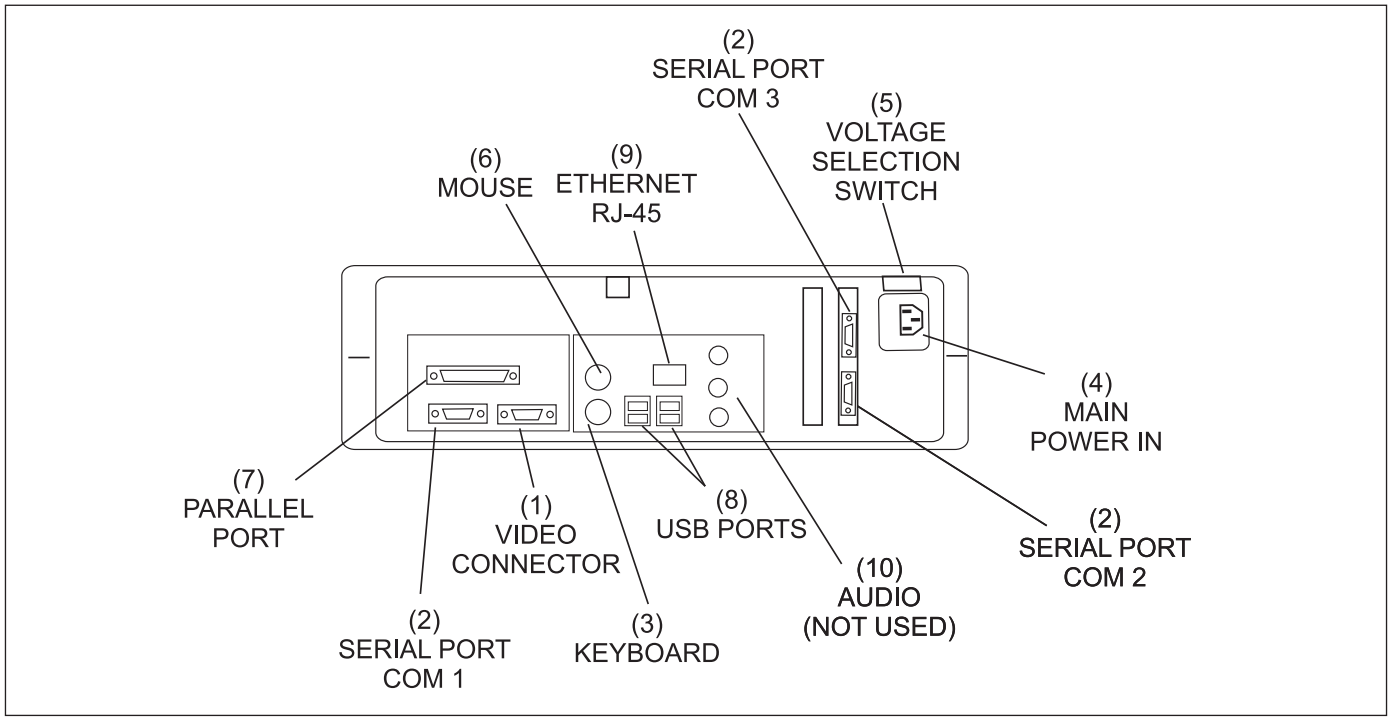
(6) USB Connector - Not Used

(8) Head Phone - Not Used

Rear Panel Connectors and Voltage Select Switch



Typical Rear Panel Connectors and Voltage Select Switch - Server PC (GX-270 Shown)



Typical Rear Panel Connectors and Voltage Select Switch - Client (GX-60S Shown)

Functions of the components on the computers are:

(1) Video Connector - A 15 pin connector for video to the VGA monitor.

(2) **Serial Ports** - The serial ports allow the connection of external devices to the computer. The port assignments vary based on the equipment installed. The ports are typically connected as follows:

COM 1	TouchScreen
COM 2	Pole Display, Receipt Printer, and Cash Drawer
COM 3	Modem
COM 4	A/V Unit
COM 5	Bar Code Reader (Vector Plus only)

(3) **Keyboard** - Connection for the 6 pin DIN cable coming from the keyboard. If the computer does not have this connector an USB port is used to connect the keyboard.

(4) **Main Power In** - Connection from computer to an AC power source. Refer to (11) Voltage Select Switch.

(5) **Voltage Selection Switch** - Enables selection of 115 V AC input power or 230 V AC input power.

(6) **Mouse** - Connection for the 6 pin DIN connector coming from the mouse. If the computer does not have this connector an USB port is used to connect the mouse.

(7) **Parallel Port Connector** - Connection for a standard report printer (not receipt printer). If the computer does not have this connector a USB port is used to connect the printer .Also see (8) USB Ports.

(8) **USB Ports** - The USB ports can be used to provide additional comports as needed through the use of RS-232 Comport Adapters or to connect standard USB devices such as a printer, mouse or keyboard.

(9) **Ethernet** - Connections used to network the Vector computers and Scorer Computers.

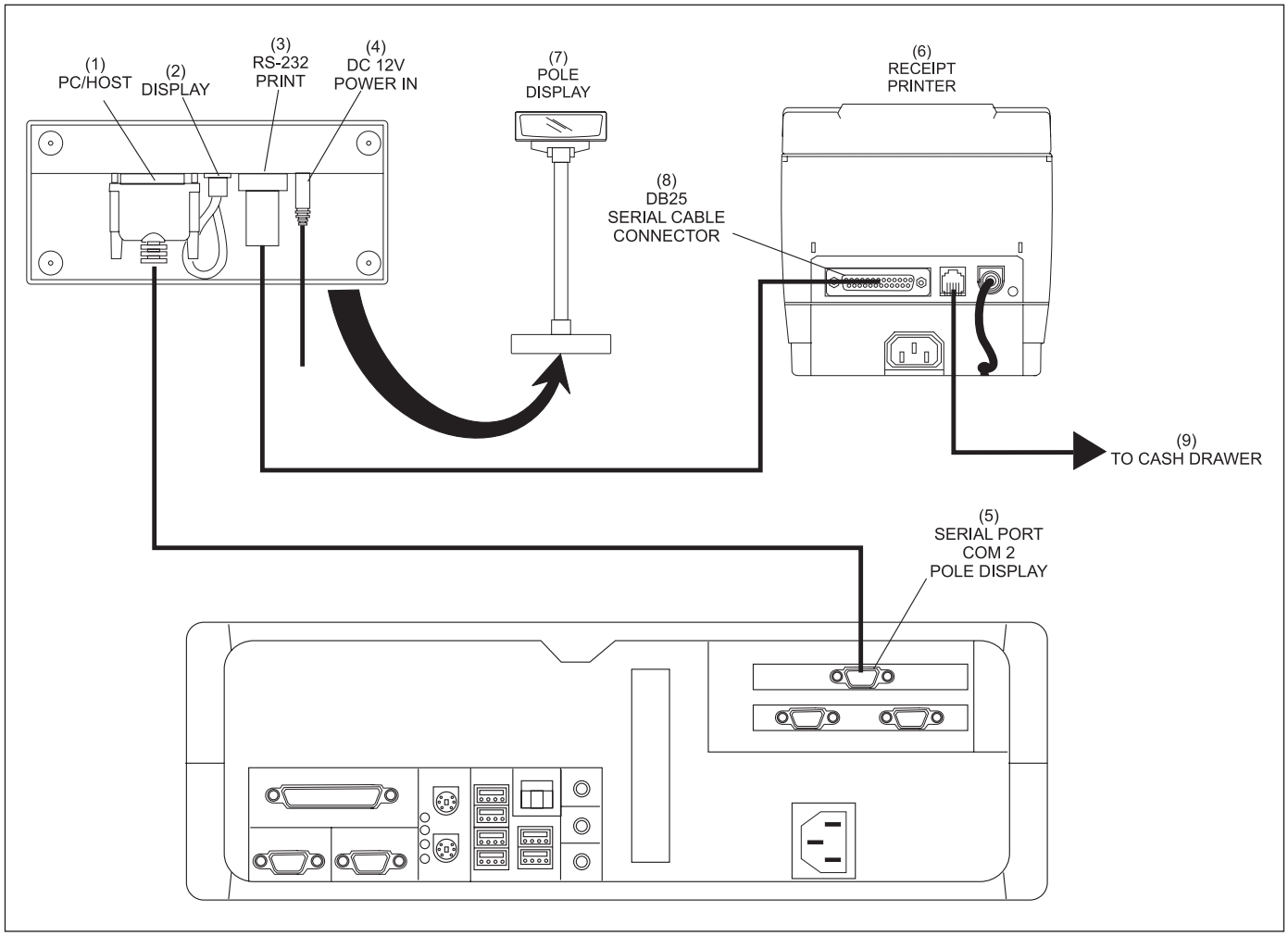
VGA Color Monitors

The VGA color monitor allows the operator to get information from the Vector/Vector Plus computer. Through this terminal, the operator can perform all the functions needed to operate the scoring system. This includes assigned and cashing out lanes, programming prices, sales tax, colors and other bowling information, and setting up and processing leagues or financial reports.

Monitors are available in CRT, LCD or LCD touchscreen configurations.

Pole Display /Receipt Printer/ Cash Drawer

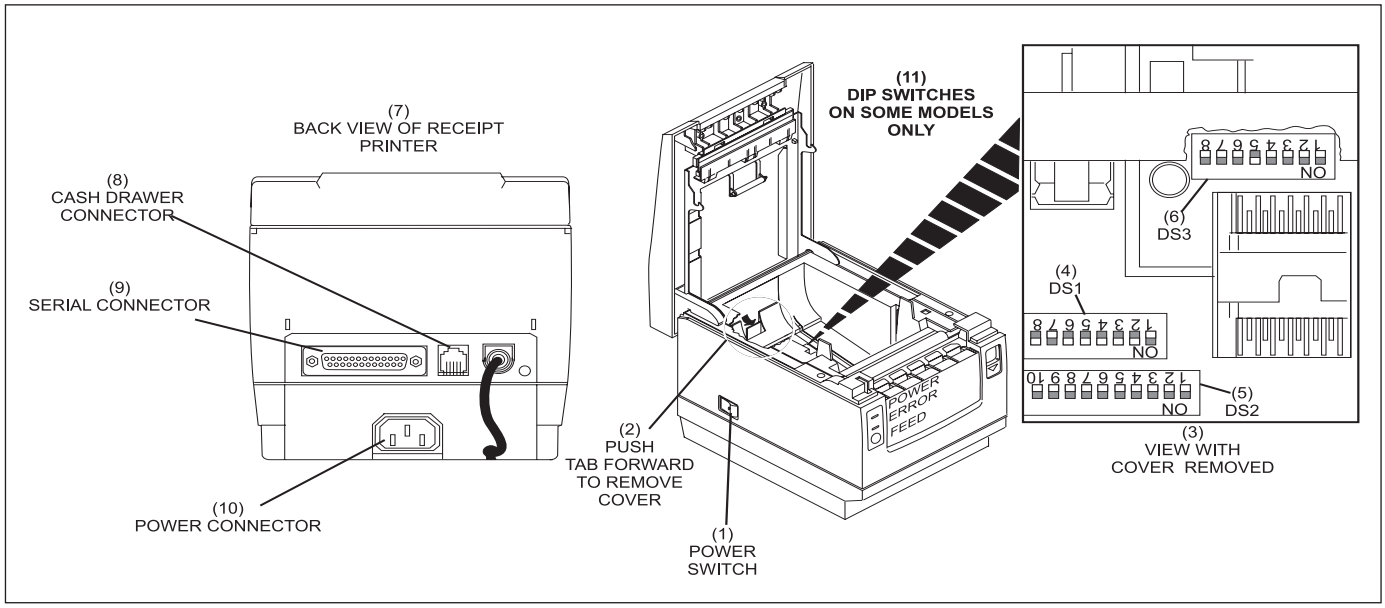
The pole display, receipt printer, and cash drawer are connected to the Vector computer at a common comport (usually Com2). Refer to figure titled *POS Equipment Wiring*



POS Equipment Wiring

(1) PC/HOST
(2) DISPLAY
(3) RS-232 PRINT
(4) DC 12V POWER IN
(5) SERIAL PORT COM2 POLE DISPLAY
(6) RECEIPT PRINTER
(7) POLE DISPLAY
(8) DB25 SERIAL CABLE CONNECTOR
(9) TO CASH DRAWER

Receipt Printer



Receipt Printer

(1) POWER SWITCH
(2) PUSH TAB FORWARD TO REMOVE COVER
(3) VIEW WITH COVER REMOVED
(4) DS1
(5) DS2
(6) DS3
(7) BACK VIEW OF RECEIPT PRINTER
(8) CASH DRAWER CONNECTOR
(9) SERIAL CONNECTOR
(10) POWER CONNECTOR
(11) DIP SWITCHES ON SOME MODELS ONLY

(1) **Power Switch** - This switch controls power to the printer.

(2) **DIP Switches** - Located on the inside of certain printer models, these switches set the configuration of the printer. Set the switches as follows:

DS1: 1,7 - OFF 2-6,8 - ON
DS2: All OFF
DS3: 1-4, 6-8 - OFF 5 - ON

(3) **Power Connector** - Input connector for main power.

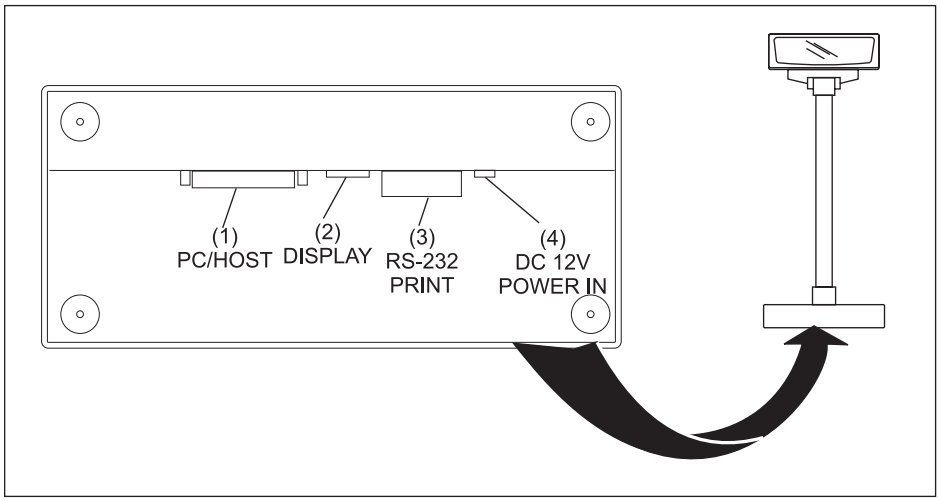
(4) **Serial Connector** - Connection for serial cable from Vector Computer.

(5) **Cash Drawer** - Connection to the cash drawer.

Pole Display

The optional pole display shows the amount of money a customer owes as well as the amount of change the customer will receive.

The display connects directly to the client or server computer. A connector on the bottom of the display allows the connection of the receipt printer. See figure titled *Pole Display.*



Pole Display

(1) **PC/Host** - Connector to attach the display to the computer. This connection supplies serial communications to the pole display.

(2) **Display** - Connection for the display's LED readout PCB.

(3) **Receipt Printer** - Connection to the receipt printer for the POS (point of sale) terminal. This connection allows serial communication entering the PC/Host connector to continue to the printer.

(4) **DC12V** - Power connector for the pole display.

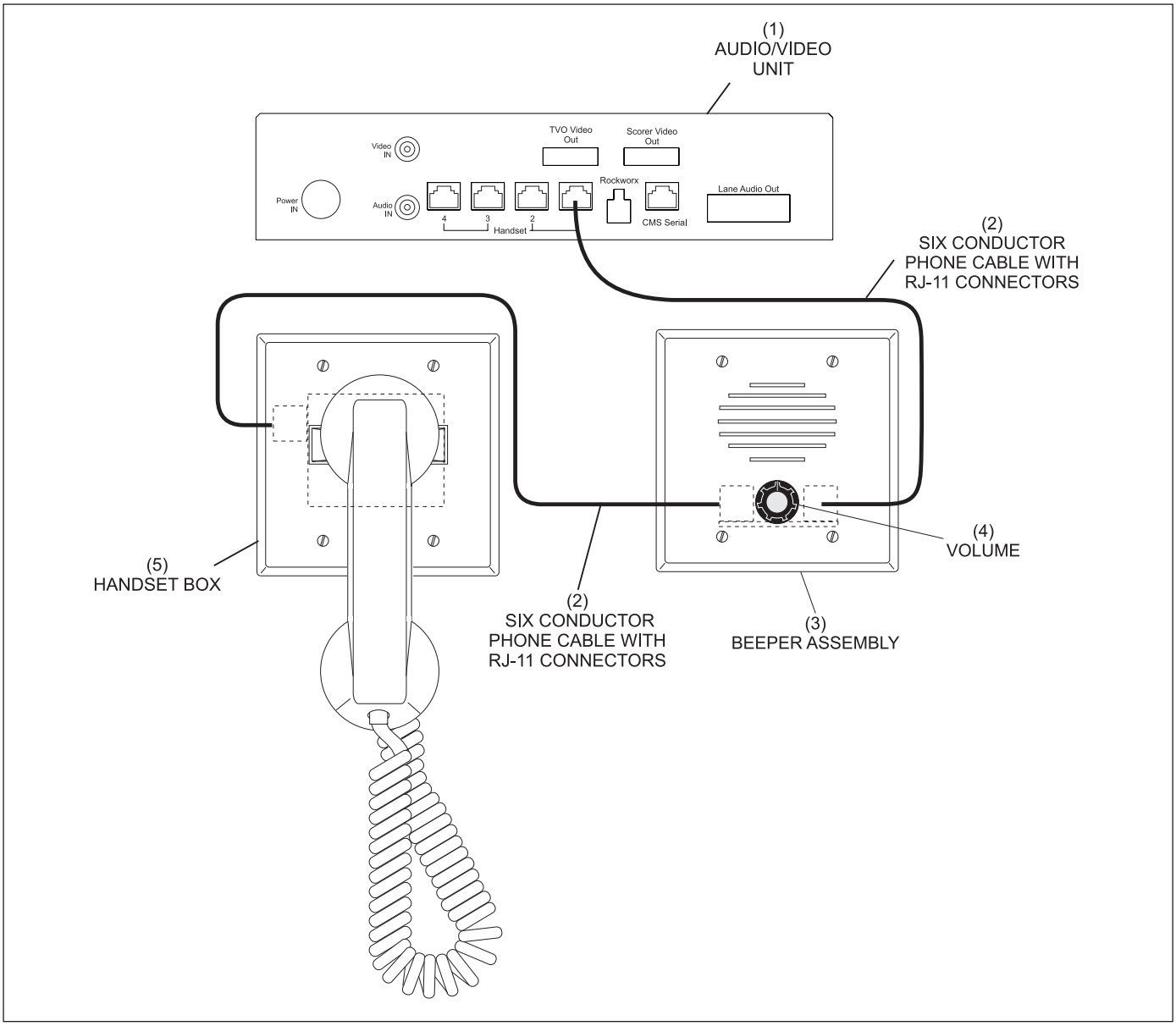
Cash Drawer

The primary function of the cash drawer is to provide a place to put money received from customers. For the convenience of the control desk operator, the cash drawer opens automatically whenever a payment key, such as “cash” is selected. If the operator is assigning or cashing-out a lane, the pinsetter and scorer will turn on or off when the drawer is closed.

Power to open the drawer comes from the receipt printer. For the drawer function properly the receipt printer must be on and cannot be in an error state.

Beeper Box

The intercom beeper assembly provides an audible indication whenever an intercom request is received from a console. The box is connected to the audio/video unit through a 6-conductor telephone cable, then to the handset box via another 6-conductor cable. A volume control on the assembly allows the control desk operator to adjust the volume level of the beep. Refer to the figure titled *Beeper Assembly*.



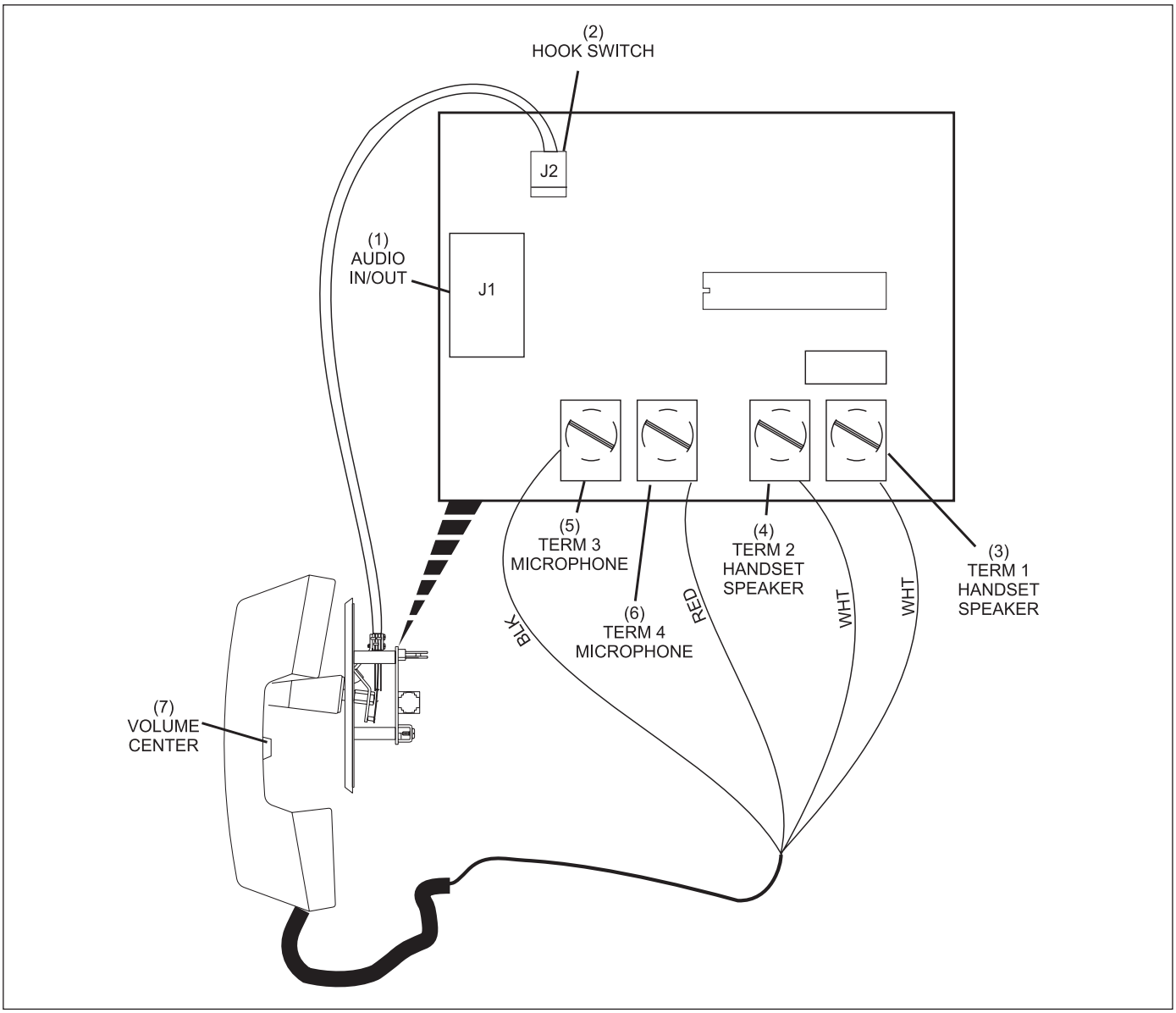
Beeper Assembly

(1) AUDIO/VIDEO UNIT
(2) SIX CONDUCTOR PHONE CABLE WITH RJ-11 CONNECTORS
(3) BEEPER ASSEMBLY
(4) VOLUME
(5) HANDSET BOX

Intercom Handset/Switch Box

The intercom handset/switch box allows an intercom handset to connect to the scoring systems. The box connects to the audio/video unit through an intercom beeper assembly and provides a telephone style intercom handset that allows the operator to have a two-way conversation with a bowler standing at a scorer console. Up to two boxes can be connected to the audio/video unit.

Inside each handset/switch box is a circuit board that handles all the functions for the intercom. This board is called the Handset Interface PCB.
Refer to the figure titled *Handset Interface PCB (Part No. 57-300183-000)*.



Handset Interface PCB (Part No. 57-300183-000)

The function of the components on the Handset Interface PCB are:

(1) **Audio In/Out (J1)** - Telephone type connector (RJ-11) used to connect the box to the audio/video unit. This allows the transfer of the "audio" to and from the scoring systems.

(2) **Hook Switch (J2)** - Connection to the hook switch located in the box. The switch allows the operator to connect to the console simply by lifting the handset. Replacing the handset on the "hook" disconnects the intercom.

(3) **Handset Speaker (Term 1)** - Connection to the speaker in the earpiece of the handset.

(4) **Handset Speaker (Term 2)** - Connection to the speaker in the earpiece of the handset.

(5) **Microphone (Term 3)** - Connection to the microphone in the mouthpiece of the handset.

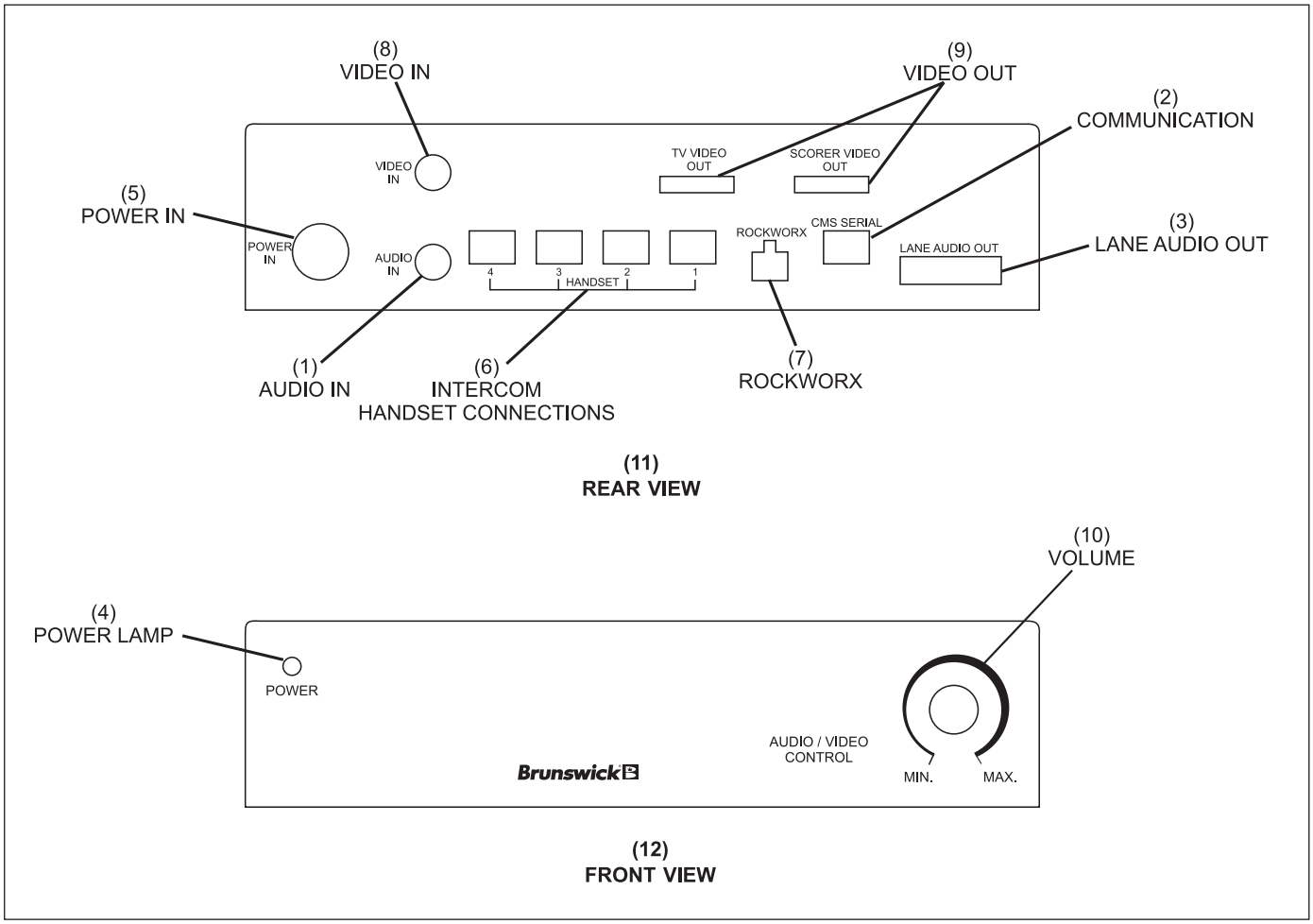
(6) **Microphone (Term 4)** - Connection to the microphone in the mouthpiece of the handset.

(7) **Volume Control** - The volume control allows the control desk operator to adjust the audio level of the earpiece of the handset.

Audio/Video Control Unit

External

The audio/video control unit is responsible for interfacing an A/V source's audio and video, as well as the intercom audios to the scoring system. Refer to the figure titled *Audio/Video Control Unit - External View (Part No. 57-300188-000).*



Audio/Video Control Unit - External View (Part No. 57-300188-000)

(1) AUDIO IN
(2) COMMUNICATION
(3) LANE AUDIO OUT
(4) POWER LAMP
(5) POWER IN
(6) INTERCOM HANDSET CONNECTIONS
(7) ROCKWORX
(8) VIDEO IN
(9) VIDEO OUT
(10) VOLUME
(11) REAR VIEW
(12) FRONT VIEW

The function of the connectors on the audio/video control unit are:

(1) **Audio In** - Input for the audio coming from the "audio out" connection of the VCR or other A/V source..

(2) **Communications** - Connection for the communication coming from the Vector/Vector Plus computer.

(3) **Lane Audio Out** - Output connector for the "global audio" cable that delivers the intercom and VCR audio(s) going to the scorer consoles.

(4) **Power Lamp** - The light is on whenever power is supplied to the box.

(5) **Power In** - Main power input to the box. The input to the box is 5 VDC, 12 VDC and -12 VDC.

(6) **Intercom Handset Connections** - Connection for the cable(s) coming from the intercom handset/switch box(es). Two handsets can be attached to the AV box. Do not use inputs 3 or 4.

(7) **Rockworx** - Not used.

(8) **Video In** - Input for the video coming from the "video out" connection of the VCR or other A/V source. This connection is not used for Widescreen overhead installations

(9) **Video Out (2)** - Connections for the cables that deliver the TV video to the CRT overhead monitors. These connections is not used for widescreen overhead installations.

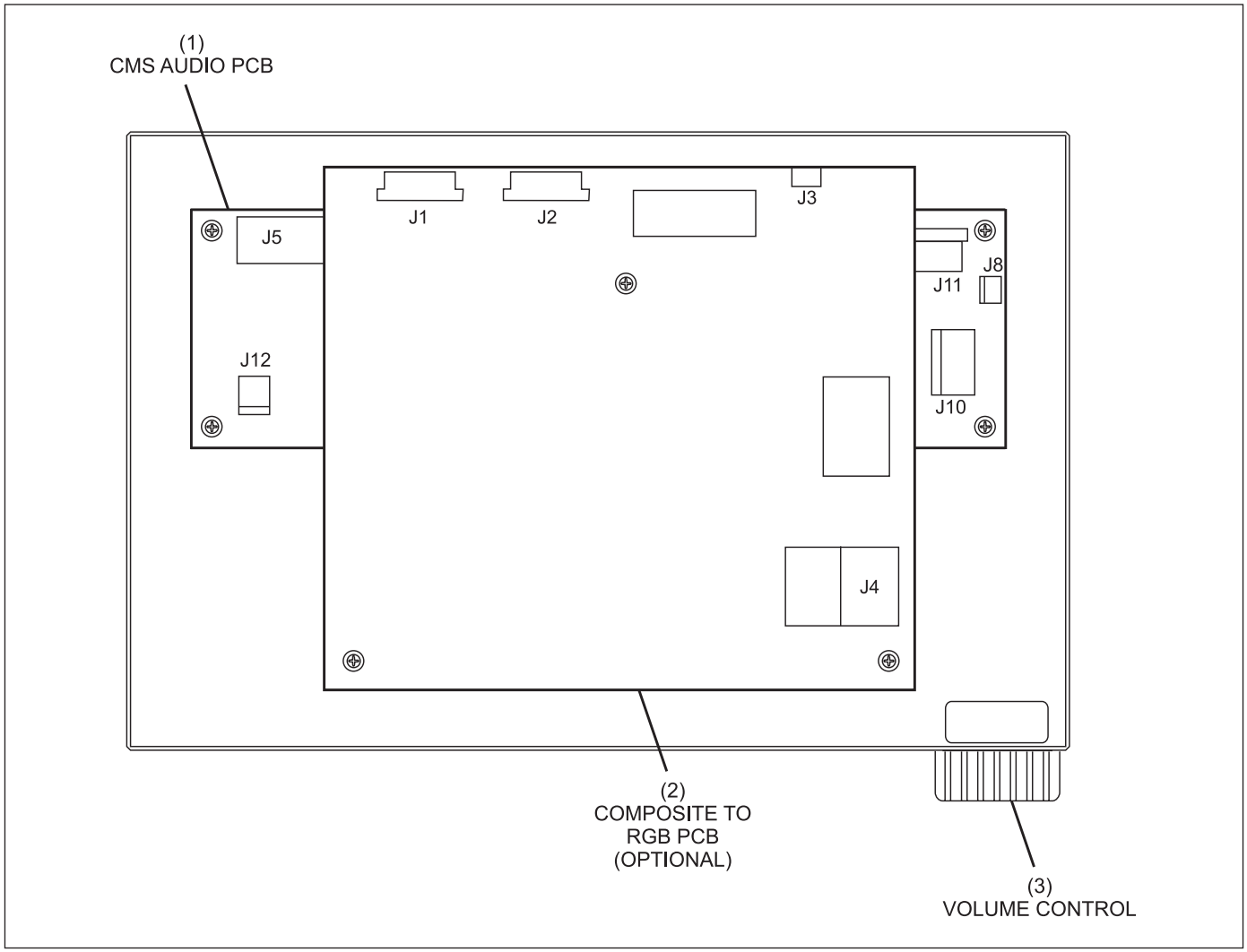
(10) **Volume** - Adjustment used to set the maximum TV audio level available at the scorer console.

Internal

Inside the audio/video control unit are two circuit boards: the Composite to RGB PCB (Video PCB) and the Audio PCB. The Composite to RGB PCB is responsible for adapting an A/V source's video to the CRT overhead monitors. Once adapted, the video is referred to as global video. The board is not used in installations with widescreen overheads.

The Audio PCB adapts the A/V source's audio and the intercom audio(s) and handle communication to the Vector/Vector Plus computer. The audio is delivered to the consoles through the global audio cable.

The boards are powered by an external power supply. Refer to the figure titled *Audio/Video Control Unit - Internal View*.

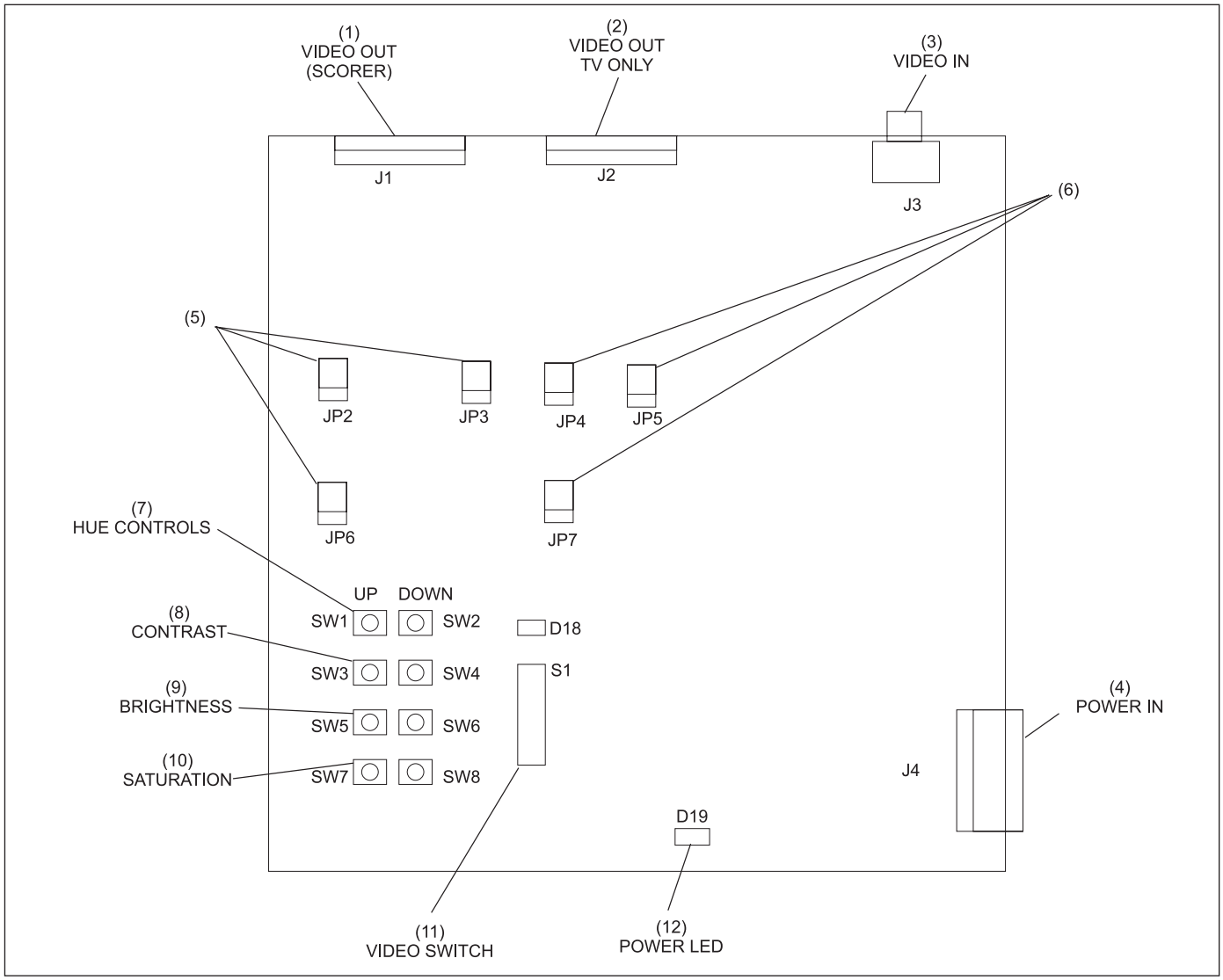


Audio/Video Control Unit - Internal View

(1) CMS AUDIO PCB (2) COMPOSITE TO RGB PCB (OPTIONAL) (3) VOLUME CONTROL

Composite to RGB PCB

The Composite to RGB PCB is responsible for converting the video originating at an A/V source to a format that the CRT overhead monitors in the Vector system can use. As the name implies, the PCB converts the composite signal that comes from the A/V source into an RGBS format. This RGBS video is sent to CRT overhead monitors. The board is not used when widescreen overhead monitors are installed. Refer to the figure titled *Composite To RGB PCB (Part No. 57-300956-00)*.



Composite RGB PCB Board "B" (Part No. 57-300956-000)

The function of the connections and components on the Composite to RGB PCB are:

(1) Video Output (J1) - Video output for the converted VCR video. This RGBS video is sent to the overhead monitors for 1st half of the center.

(2) Video Output (J2) - Video output for the converted VCR video. This RGBS video is sent to the overhead monitors for 2nd half of the center.

(3) Video In (J3) - Input for the VCR video.

(4) **Power In (J4)** - Input for DC power that is needed to power the PCB. The DC voltages entering the PCB are 5 VDC, 12 VDC and -12 VDC levels.

(5) **JPR2, JPR3, JPR6** - Jumpers used to configure the PCB to the length of the cable used to send the RGBS Video to the overhead monitors from the TV Video out connection . The three jumpers must be set the same way. Use the following chart to determine the jumper settings. The PCB is set at the factory for a 200 foot cable length (pins 1 and 2 jumpered together).

CABLE LENGTH	MICRO JUMPER SETTING (PLACEMENT)
100 Feet	Pins 2 and 4
200 Feet	Pins 1 and 2 (Factory Setting)
300 Feet	Pins 3 and 4
400 Feet	Pins 5 and 6

(6) **JPR4, JPR5, JPR7** - Jumpers used to configure the PCB to the length of the cable used to send the overhead monitors from the scorer video out connection. The three jumpers must be set the same way. Use the following chart to determine the jumper settings. The PCB is set at the factory for a 200 foot cable length (pins 1 and 2 jumpered together).

CABLE LENGTH	MICRO JUMPER SETTING (PLACEMENT)
100 Feet	Pins 2 and 4
200 Feet	Pins 1 and 2 (Factory Setting)
300 Feet	Pins 3 and 4
400 Feet	Pins 5 and 6

(7) **Hue Control** - Press the up or down buttons to change picture tint.

(8) **Contrast Control** - Press the up or down buttons to increase or decrease the picture contrast. Press both buttons to reset the contrast setting.

(9) **Brightness Control** - Press the up or down buttons to increase or decrease the picture brightness. Press both buttons to reset the brightness setting.

(10) **Saturation Control** - Press the up or down buttons to increase or decrease the picture saturation level. Press both buttons to reset the saturation level to midpoint.

(11) **Video Switch (S1)** - 8 position DIP switch used to select either a normal video output or a color bar display for the overhead monitor

SETTING	DESCRIPTION
Switches 1-8 OFF	Normal Video Display
Switches 1-7 OFF Switch 8 ON	Color Bar Display

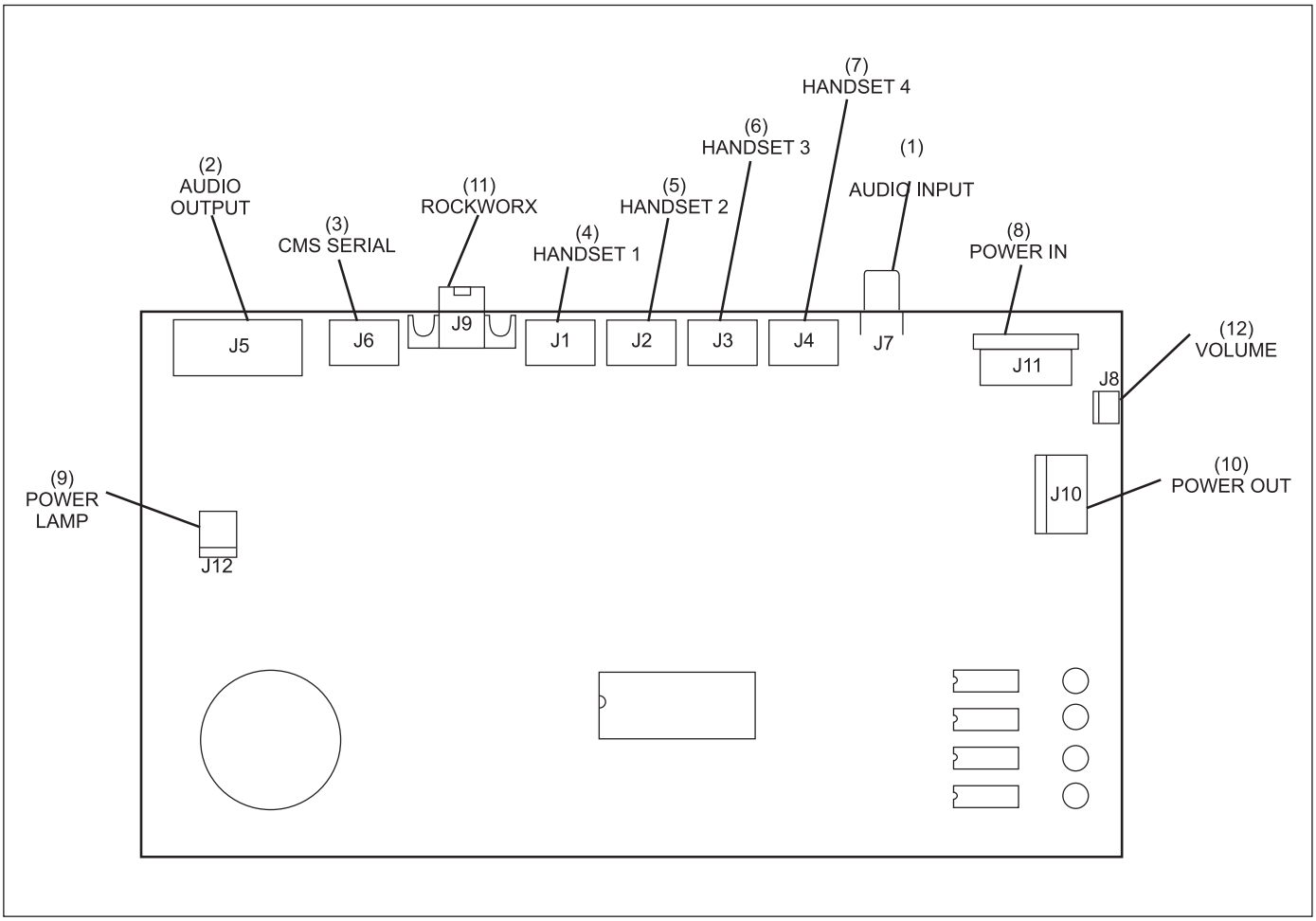
(12) **Power LED - (D19)** - This LED is on when power is applied to the PCB.

(13) **Status LED (D18)** - This LED is on when the PCB is operating normally.

Audio PCB

The Audio PCB is responsible for interfacing the A/V source's audio and up to two intercoms to the scoring system. The audio (global audio) is amplified by the PCB prior to being sent out to each scorer console.

The PCB interfaces the intercom audios to the system by allowing simultaneous conversation between the Control Desk and the two consoles. In addition, the PCB allows the bowler and the control desk to talk at the same time, eliminating the need to press a button to talk or listen. Refer to the figure titled *Audio PCB (Part No. 57-300167-000)*.



Audio PCB (Part No. 57-300167-000)

The functions of the components and connections on the Audio PCB are as follows:

(1) Audio Input (J7) - Input for the audio coming from the "audio out" connection of the A/V source.

(2) Audio Output (J5) - Connection for the audio being sent to the console flatscreens or keypads for each lane. (Referred to as Lane Audio on the back of the unit).

(3) **CMS Serial (J6) -** Connection for the communication coming from a Vector/Vector Plus computer. This communication allows the computer to determine which intercom handset has been used to answer an intercom request. Communication is then sent to the scorer computer of the requesting lane so that the proper intercom line is selected.

(4) **Handset 1 (J1) -** Connection for cable coming from the intercom handset/switch box for the first handset.

(5) **Handset 2 (J2) -** Connection for cable coming from the intercom handset/switch box for a second handset.

(6) **Handset 3 (J3) -** Not used

(7) **Handset 4 (J4) -** Not used

(8) **Power In (J11)-** Main power input to the box. The input to the box is 5 VDC, 12 VDC, and -12 VDC.

(9) **Power Lamp (J12) -** Connection to the power indication LED located on the front of the unit.

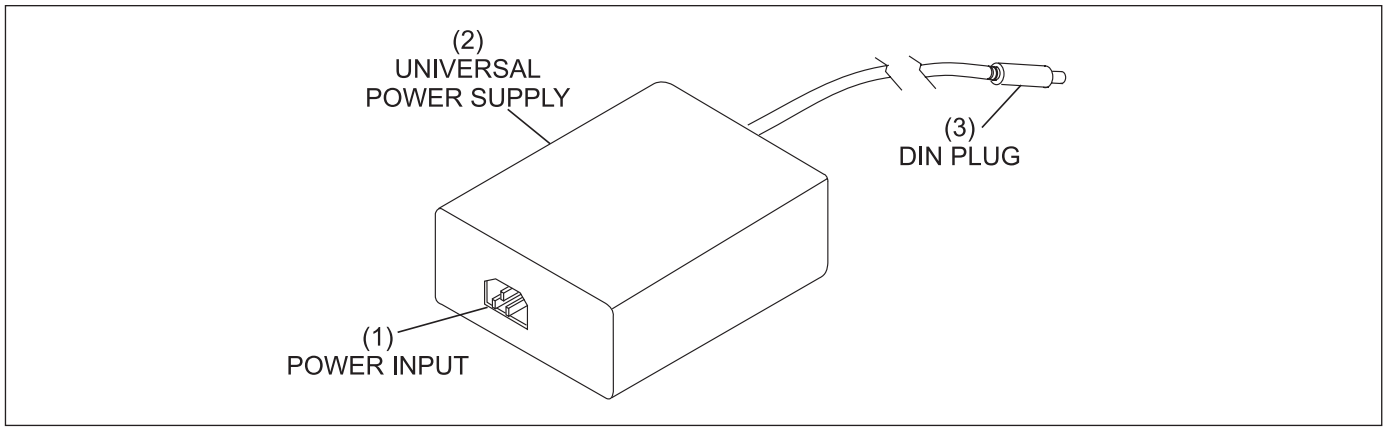
(10) **Power Out (J10) -** Power output to Composite to RGB PCB.

(11) **Rockworx (J9) -** Not used.

(12) **Volume (J8) -** Adjustment used to set the maximum TV audio level available at the scorer.

Power Supply Unit

The power supply unit provides the audio/video unit with the 5 VDC, 12 VDC, and -12 VDC. The input to the power supply unit can be either 120 VAC or 240 VAC. The supply will automatically adapt to either input and supply the proper output voltage.. Refer to the figure titled *Power Supply Unit*.



Power Supply Unit

(1) POWER INPUT

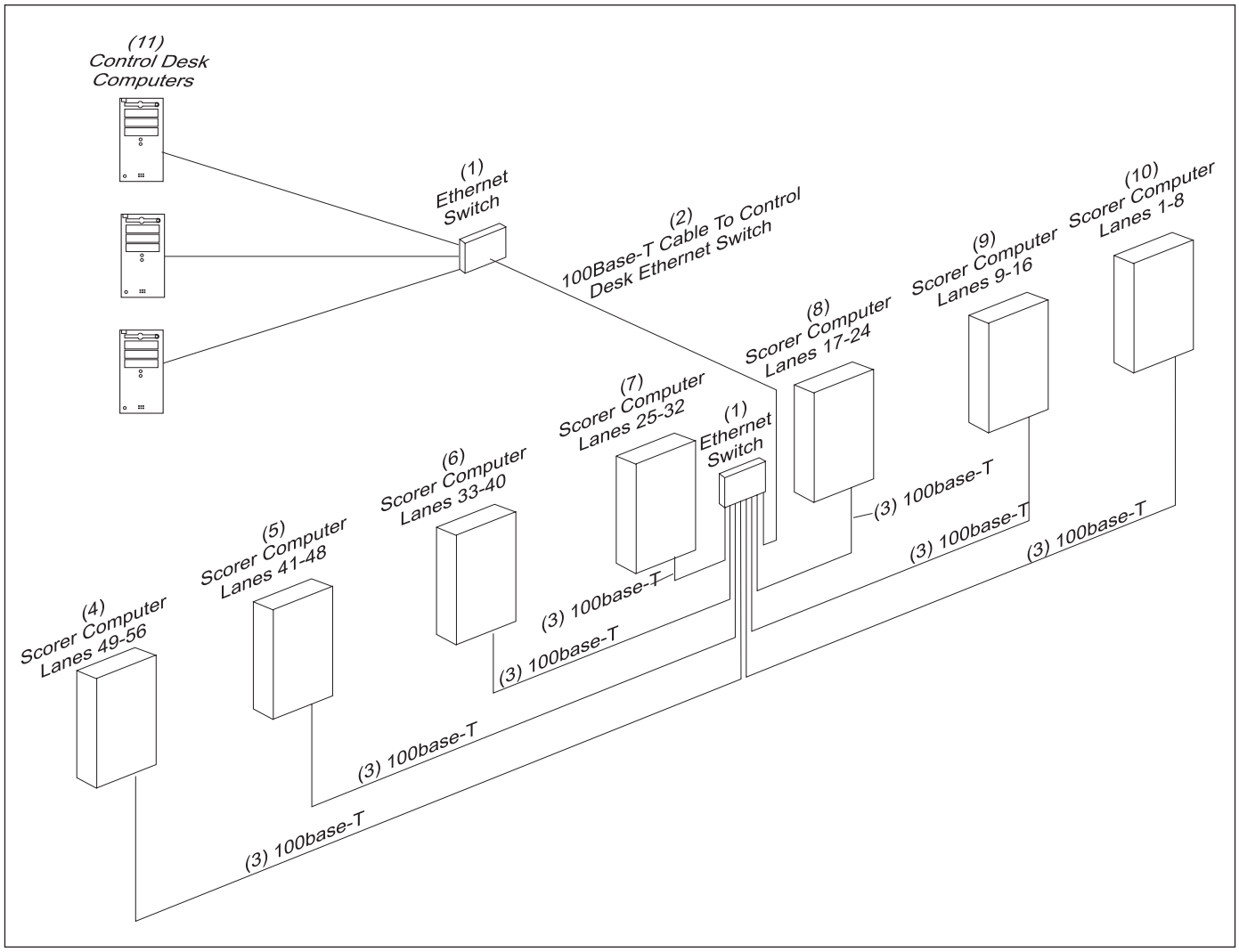
(2) UNIVERSAL POWER SUPPLY

(3) DEUTSCHE INDUSTRY NORM PLUG

Ethernet Switch

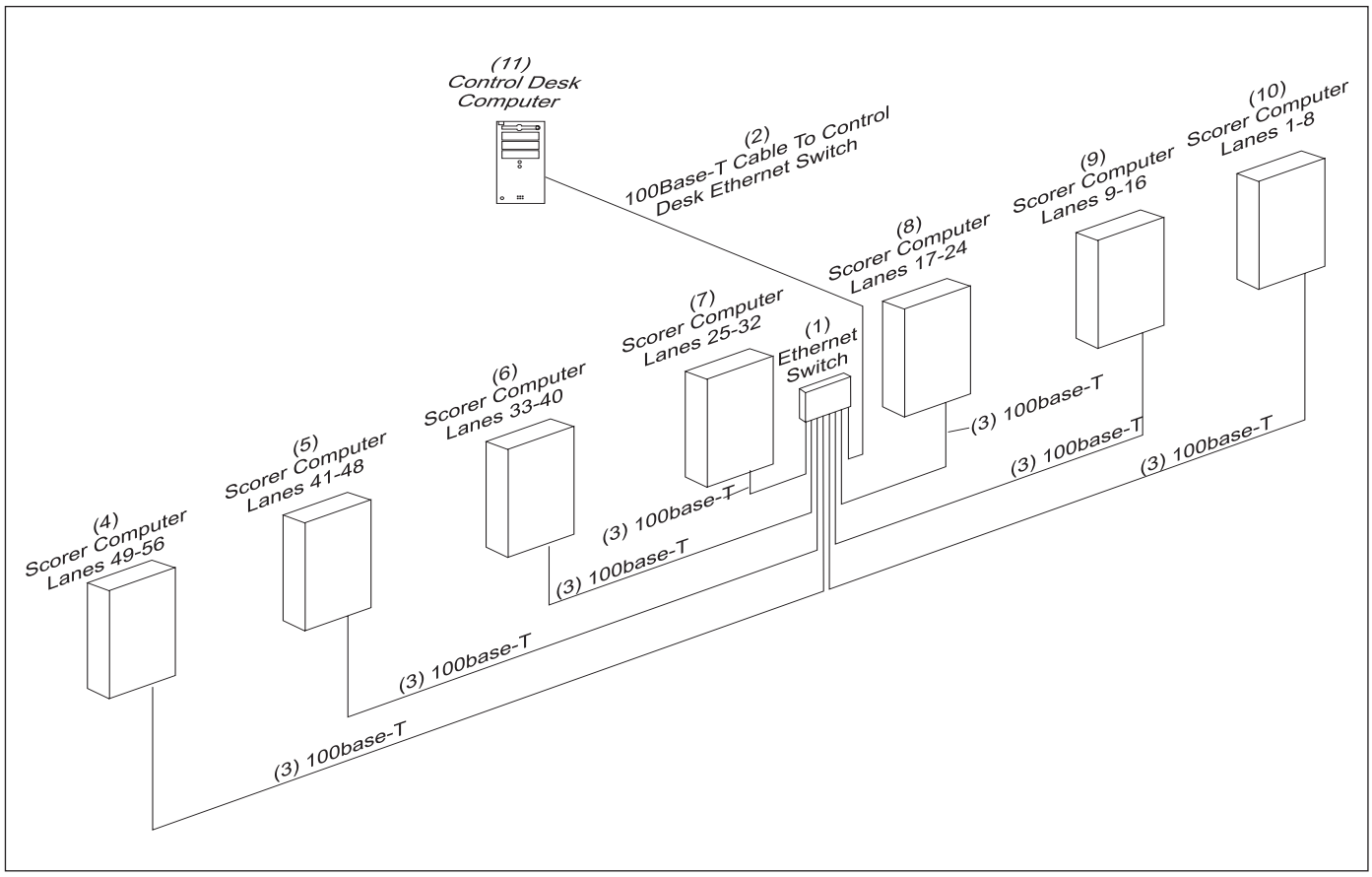
An Ethernet switch allows the control desk computer(s) and the scorer computers to connect together in a high speed network. The switch provides two way communication (full duplex) so the computers can send and receive data at the same time. The switch also provides each of it outputs (ports) dedicated bandwidth to increase the efficiency of the network.

The number of switches present in the system depends on the number of computers at the control desk and office and the number of scorer computers. Refer to the figures titled *Ethernet Switch Cabling - Multiple Control Desk Computers, Ethernet Switch Cabling - Single Control Desk Computer, and 3Com 3C16794 Switch*, and *Netgear GS108.*



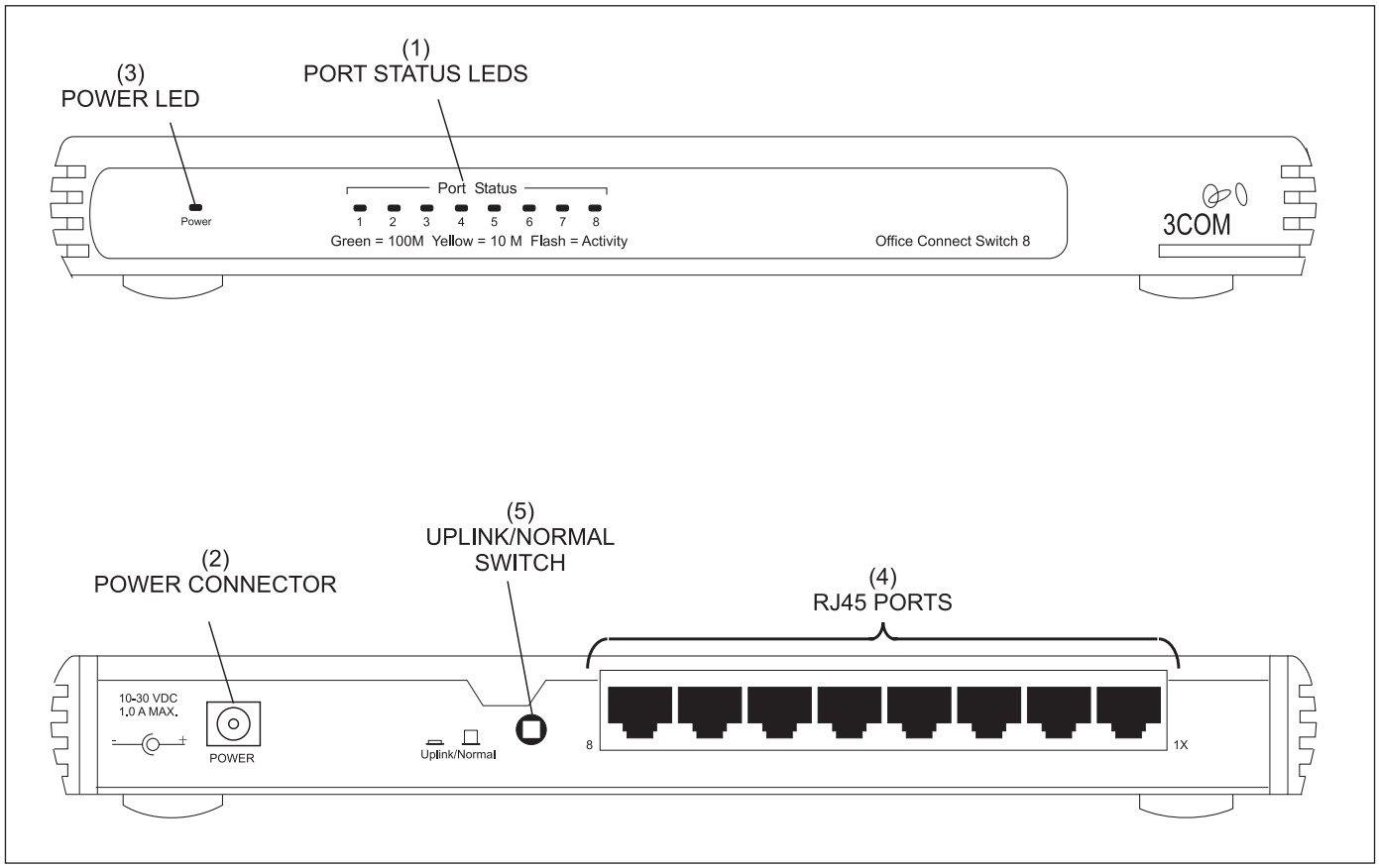
Ethernet Switch Cabling - Multiple Control Desk Computers

(1) ETHERNET SWITCH
(2) 100BASE-TX CABLE TO CONTROL DESK
(3) 100BASE-TX
(4) SCORER COMPUTER LANES 49-56
(5) SCORER COMPUTER LANES 41-48
(6) SCORER COMPUTER LANES 33-40
(7) SCORER COMPUTER LANES 25-32
(8) SCORER COMPUTER LANES 17-24
(9) SCORER COMPUTER LANES 9-16
(10) SCORER COMPUTER LANES 1-8
(11) CONTROL DESK COMPUTERS



Ethernet Switch Cabling - Single Control Desk Computer

(1) ETHERNET SWITCH
(2) 100BASE-TX CABLE TO CONTROL DESK
(3) 100BASE-TX
(4) SCORER COMPUTER LANES 49-56
(5) SCORER COMPUTER LANES 41-48
(6) SCORER COMPUTER LANES 33-40
(7) SCORER COMPUTER LANES 25-32
(8) SCORER COMPUTER LANES 17-24
(9) SCORER COMPUTER LANES 9-16
(10) SCORER COMPUTER LANES 1-8
(11) CONTROL DESK COMPUTER



3Com 3C16794 Switch

The functions of the components and connectors on the 3Com 3C16794 8 Port switch are:

(1) Port Status LEDs - These LEDs display indicate the status and communication speed of the computer connected to the port corresponding port. When the LED is green the communication is at 100Mbps when yellow is 10Mbps.
If the LED is on, the link between the port and the computer is OK. If the LED is flashing, the link is OK and data is being transmitted or received. If the LED is off, nothing is connected, or the connected device is switched off, or there is a problem with the connection.

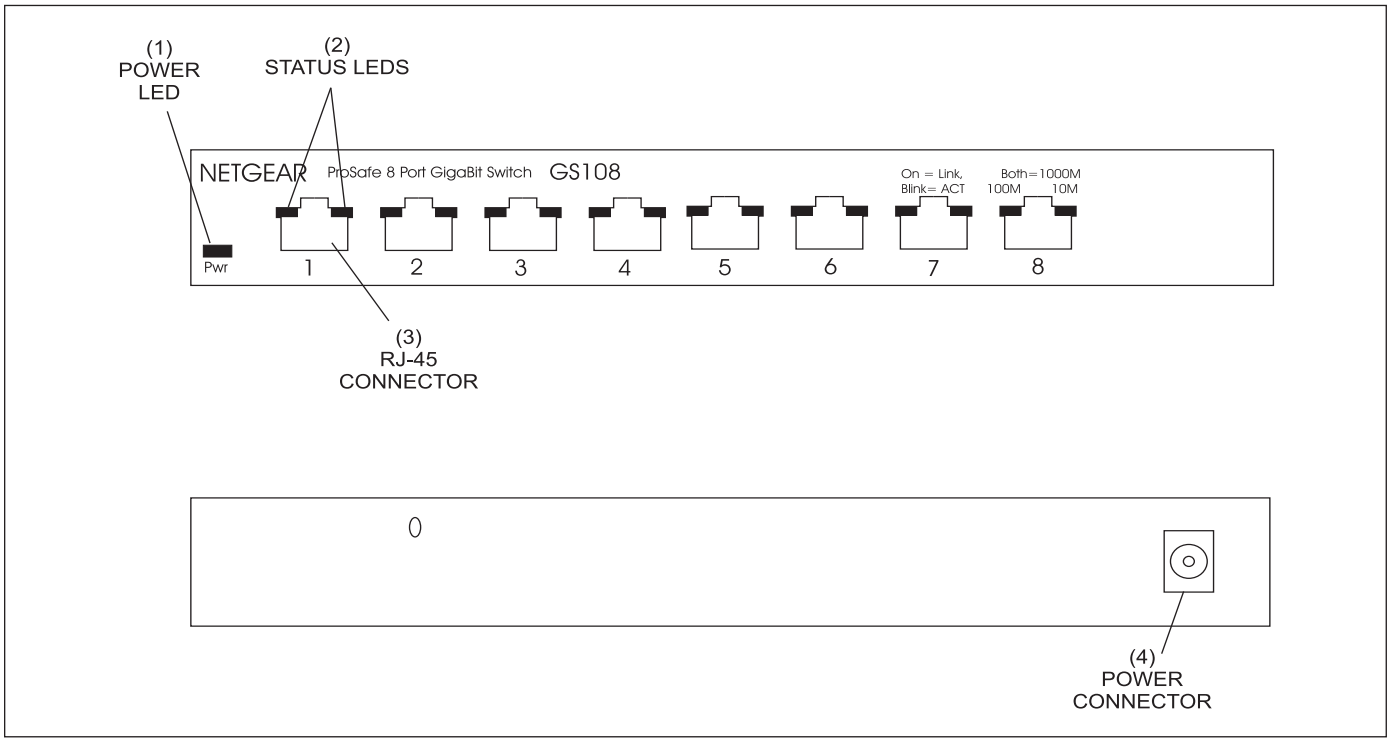
(2) Power Connector - Input for power coming from the A/C power adaptor. Only use the power adapter that is supplied with the switch.

(3) Power LED - This LED indicates when the Ethernet switch is powered on.

STATE	DESCRIPTION
ON	Ethernet Hub has power
OFF	No power to Ethernet Hub

(4) RJ-45 Ports - Connection (port) for the Cat5 ethernet cables attached to each scorer computers and/or ethernet Switch located at the control desk. Each port is capable of auto sensing for 10Mbps or 100Mbps operation and operate in half-duplex mode as well as full duplex mode. Refer to *(1) Port Status LEDs.*

(5) Uplink/Normal Switch - This selector allows the user to select whether the Switch will internally cross the transmit and receive wires for the RJ-45 connector for port 8. This allows multiple Switches to be cascaded together via the last port. In most situations the selector will be in the **Normal** position. The only time it will be set to **Uplink** is at the control desk when the output is used to connect the Switch located on the curtain wall. Using the wrong position will cause any computer or computer network attached to port 8 to have communication errors.



Netgear GS108

The functions of the components and connectors on the 3Com 3C16794 8 Port switch are:

(1) **Power LED** - This LED indicates when the Ethernet switch is powered on.

(2) **Port Status LEDs** - These LEDs indicate the status of each RJ-45 connector. When the left LED is green , a link with a communication rate of 100M is established between the port and a computer or second switch. If the right LED is lit a 10M link is established. Both LEDs light to indicate a 1000M link. Flashing LED to indicate activity is occuring through the port.

(3) **RJ-45 Connector** - Connection (port) for the Cat5 ethernet cables attached to each scorer computers and/or ethernet Switch located at the control desk. Each port is capable of auto sensing for 10Mbps, 100Mbps or 1000Mbps operation.

(4) **Power Connector** - Input for power coming from the A/C power adaptor. Only use the power adapter that is supplied with the switch.

Vector Control Desk Screens

Even though Desk operations are not within the scope of this manual, certain control desk functions such as configuring the system or downloading information to the scorer computers should be understood by the center mechanic. These selections can be found on the Settings, Service and File Menus located at the top of the Lane Status screen.

Settings Menu

The "Settings" menu is used to control various system settings. The selections important to the mechanic are Setup and Pin Settings.

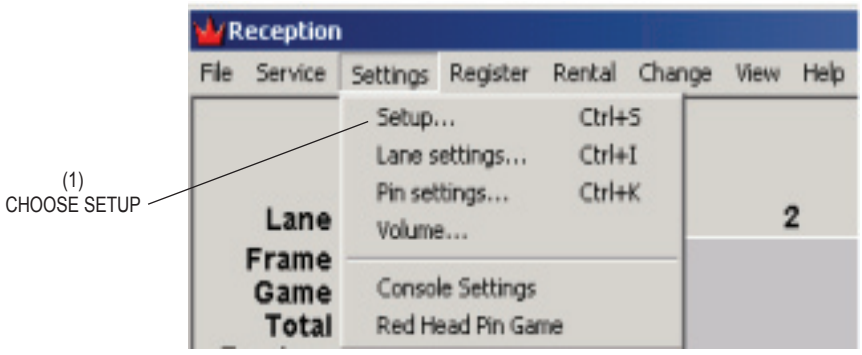
Setup

The "Setup" screen is arranged by functions, such as "Front Desk, Default Rates, Scorer, Print, Prepay, Center Information, Intercom and Service, and Member" tabs. For the center mechanic the Scorer and Intercom and Service tabs are special importance. Refer to the figure titled *Settings Menu.*

To enter the setting page select:

1. Select the "Settings" menu.
2. Select the "Setup" menu item.
3. Enter a password, if required.
4. Select the desired functional tab.
5. Make desired changes.
6. Select the "OK" button.

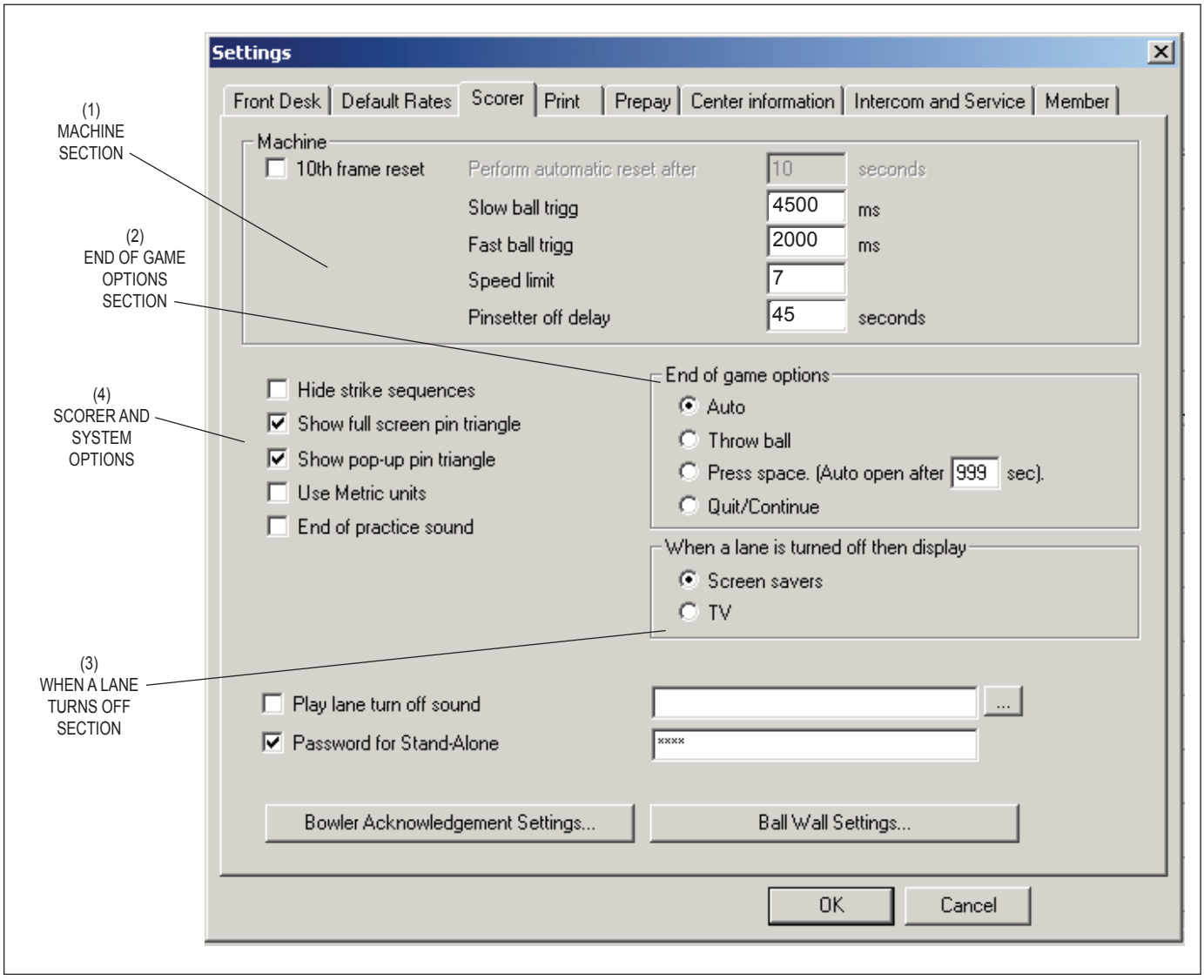
NOTE:
The Vector program will automatically exit and restart when settings have been changed.



Settings Menu.

(1) CHOOSE SETUP

Scorer Tab



Scorer Tab

(1) MACHINE SECTION

(2) END OF GAME OPTIONS SECTION

(3) WHEN A LANE TURNS OFF SECTION

(4) SCORER AND SYSTEM OPTIONS

Machine Section

The “10th Frame Reset” checkbox controls whether the scorer will recycle the pinsetter when there are standing pins after the third ball in the tenth frame. The pinsetter will cycle automatically using the reset button, and the machine will complete a non-scoring second ball cycle. The “seconds” field to the right of the “10th Frame Reset” checkbox controls how long the scorer should wait after the ball is detected, before the machine is triggered. This setting must allow for the machine to complete the previous cycle. If the machine is triggered while it is still in motion from the previous cycle, the machine will ignore the trigger, and it will appear that the machine is not resetting automatically. In some situations it may cause the machine to stop in mid cycle. If the delay is set too long the machine may cycle when a bowler isn’t expecting it, especially if they manually triggered the machine while waiting for the automatic trigger.

NOTE:
A good starting value for “10th Frame Reset” is 10 seconds.

The “Slow Ball Trigg” field is used for installations with pin cameras to set the amount of time the Distribution board will wait before automatically triggering the pinsetter when a slow moving ball is detected. The system determines if a ball is moving slow based on the value set in the “Speed Limit” field. If the calculated ball speed is below the value set in the “Speed Limit” field, the system uses the “Slow Ball Trigg” value. When the ball speed is higher than the value set in the “Speed Limit” field, the system uses the “Fast Ball Trigg” value. This value should be high enough to allow for the machine to trigger on its own but not so high that the bowler has to wait for the machine to trigger.

NOTE:
A good starting value for the “Slow Ball Trigg” is 4500 ms.

The “Fast Ball Trigg” field is used for installations with pin cameras to set the amount of time the Distribution board will wait before automatically triggering the pinsetter when a fast moving ball is detected. The system determines if a ball is moving fast based on the value set in the “Speed Limit” field. If the calculated ball speed is above the value set in the “Speed Limit” field, the system uses the “Fast Ball Trigg” value. When the ball speed is higher than the value set in the “Speed Limit” field, the system uses the “Fast Ball Trigg” This value should be high enough to allow for the machine to trigger on its own but not so high that the bowler has to wait for the machine to trigger.value.

NOTE:
A good starting value for “Fast Ball Trigg” is 2000 ms.

The “Speed Limit” field is used to set the threshold that determines whether a ball is considered to be moving “Slow” or “Fast”. This is used in conjunction with the “Fast Ball Trigg” or “Slow Ball Trigg” values to determine how long the distribution board will wait before it will automatically trigger the pinsetter.

NOTE:
A good starting value for “Speed Limit” is 7.

The “Pinsetter Off Delay” field is used to control how many seconds the pinsetter remains on after prepaid bowling has expired. This value should be set so that bowlers do not think that they can take extra shots, yet allows the pinsetter to remain on long enough for bowling balls to return all the way through the ball lift.

NOTE:
A good starting value for “Pinsetter Off Delay” is 45 seconds.

End Of Game Options Section
This section controls what the scorer will do when a game of bowling is completed, and how it will interact with the bowler to start the next game. The following options are available:

Auto - This option will automatically clear the score sheet and start the next game after a brief delay. No bowler interaction is necessary.

Throw Ball - This option will automatically clear the score sheet and start the next game only after the bowler throws the first ball for the next game.

Press Space - This option will prompt the bowler to press the space key on the keyboard or LCD Touch Screen. If the bowler does not press the space key within the number of seconds entered in the field, the system will automatically clear the score sheet and start the next game.

Quit/Continue - This option will ask the bowler whether or not they wish to continue bowling. If they select quit, the lane will turn off. If they select continue the system will automatically clear the score sheet and start the next game.

When A Lane Is Turned Off Section

This section controls what will be displayed on the overhead monitors after the lane is turned off. The following two options are available:

Screen Savers - When this option is selected the system will display the advertising graphics as screen savers. The advertising graphics are stored in the C:\Brunswick\Media\Commercial directory. Advertising graphics must be properly named. The naming convention used by the system is: PauseX.EXT where X equals a sequential number starting with one. The EXT is the extension from one of the supported file formats. There are three possible advertising graphic file formats. The system supports the following formats:

Windows Bitmap (.BMP) - 500 x 240, 24 bit color, for NTSC systems. 500 x 280, 24 bit color, for PAL systems. 640 x 480, 24 bit color, for LCD (Widescreen) systems.

Vector Slideshow (.DLT) - This format is a special format that combines a series of bitmap graphics into a animated show. Use the BMP2DLT.exe converter found in the C:\Brunswick\Utility directory to convert bitmap graphics into Vector Animations.

MPEG (.MPG) - This format is digital video and usually comes from a source such as a video camera. The system supports MPEG1.

TV - When this option is selected the system will display the video signal provided to the Audio/Video box located at the front desk when lanes are turned off.

Scorer and System Options

This section controls the following scorer and system options:

Hide Strike Sequences - This option controls whether or not the scorer will display the running score for strings of strikes. If this option is selected, the scorer will not show the score for a string of strikes until the string ends. If this option is not selected the scorer will immediately display the running score during a string of strikes.

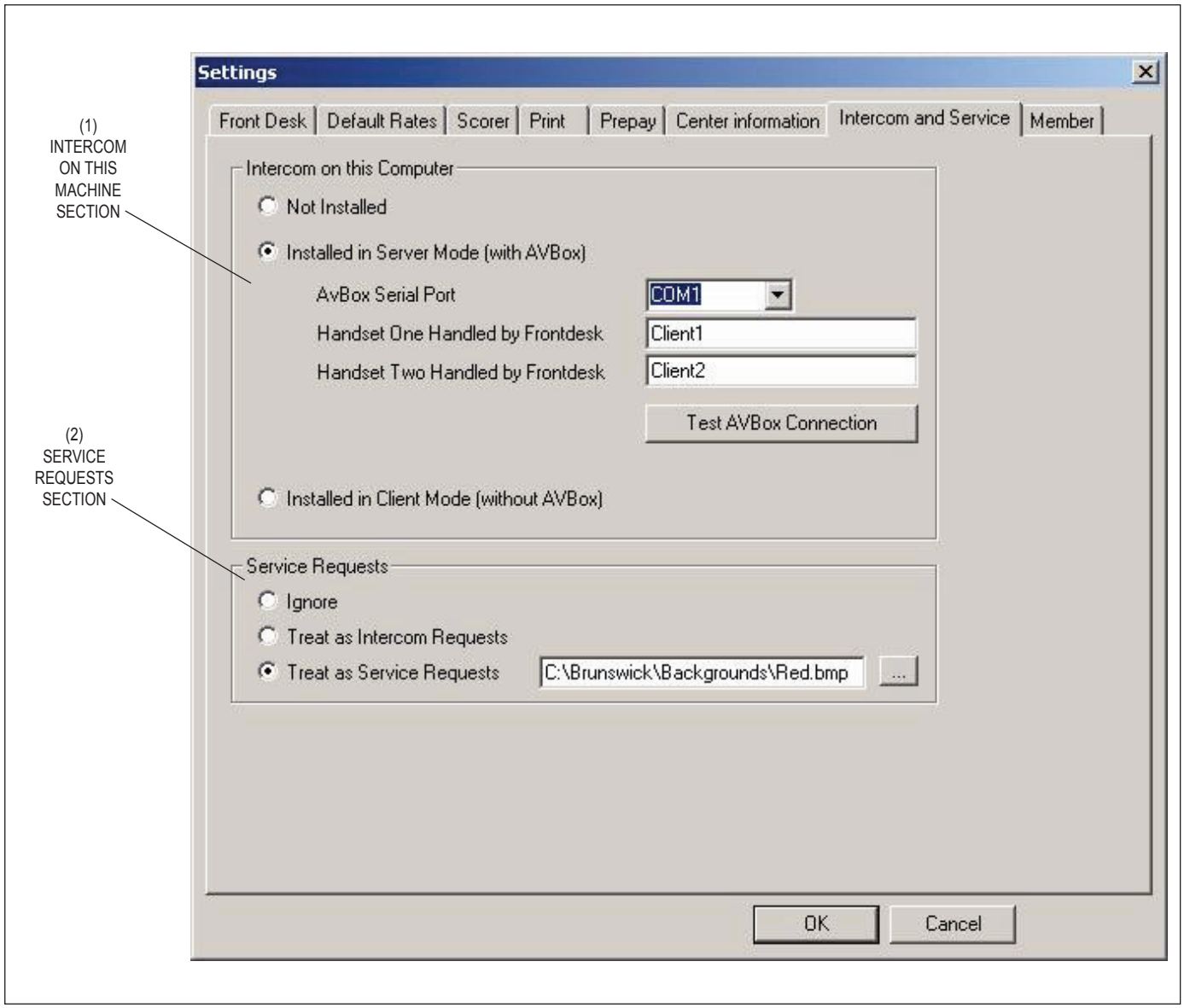
Show Full Screen Pin Triangle - This option controls whether or not the "Full Screen Pin Triangle" will be displayed after the first ball of a frame when pins were left standing. This display completely obscures the scoresheet for a short period of time. The benefit to this display is that there is a place to display a small advertising message. There can be an unlimited number of advertising messages displayed on the full screen pin triangle. They are stored in the C:\Brunswick\Media\Commercial\ Thumbnail directory. The advertising graphics must be 260 pixels wide, 70 pixels tall and 256 colors. The graphics must have a .bmp extension, but there is no other naming convention. This option can be used in conjunction with the "Pop Up Pin Triangle" Option.

Show Pop Up Pin Triangle - This option controls whether or not the pop-up pin triangle will be displayed after the first ball of a frame when pins were left standing. This display is slightly less than one quarter of the screen, and moves around the screen so that the current score is usually visible. This display is not removed until the second ball is thrown. This option can be used in conjunction with the "Full Screen Pin Triangle" option.

Use Metric Units - This option controls whether the system will display ball speed in Miles Per Hour (MPH) or Kilometers Per Hour (KPH) on the scoresheet. This also controls which whether MPH or KPH is entered in the "Speed Limit" field of the "Machine" section.

Play Lane Turn Off Sound - This option controls whether or not the front desk system will play a sound when a lane is turned off. This alerts the desk employee when a lane is turned off. In the field to the right of the checkbox enter or navigate to the .WAV file that should be played when a lane is turned off.

Intercom And Service Tab



Intercom and Service Tab

(1) INTERCOM ON THIS MACHINE SECTION (2) SERVICE REQUESTS SECTION

Intercom on this Computer Section

This section controls the setup of the intercom. The following options are available:

Not Installed - When this option is selected, the system has no intercom installed.

Server Mode - When this option is selected, the Audio/Video (A/V) box is connected to this computer. The port where the A/V box is connected must be selected using the drop down menu. The "Handset One" field tells the system which front desk computer will answer the intercom connected to the "Handset One" jack on the A/V box. The "Handset Two" field tells the system which front desk computer will answer the intercom connected to the "Handset Two" jack on the A/V box. The "Test A/V Box Connection" button can be used to test the serial port connection between the computer and the A/V box.

Client Mode - When this option is selected, the A/V box is connected to a different computer on the network.

Service Requests Section

This section controls the function of the "Service" button on the scorer console. The following options are available:

Ignore - When this option is selected the service button at the scorer will be ignored.

Intercom - When this option is selected the service button at the scorer will place an intercom request in the queue at the front desk and change the background of the scoresheet to the service graphic selected below.

Service - When this option is selected the service button at the scorer will change the background of the scoresheet to the service graphic selected in the box to the right. When this option is selected, intercom calls cannot be made to the front desk.

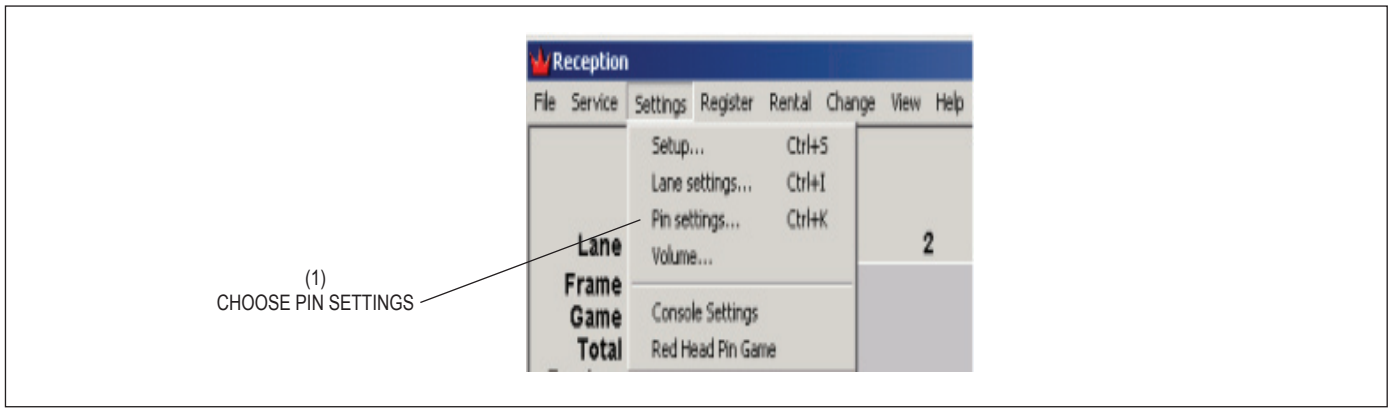
Pinsettings

The “Pinsetting” function is used to control the operation of the Pinfall Camera. The Pinfall Camera takes a picture of the standing pins that is used to calculate the score. The camera settings are very important for proper operation of the scoring system. The score for each ball is determined by comparing the light level within a target with a threshold value. If the light level inside the target is higher than the threshold value, the scorer will determine the pin is standing. If the light level inside the target is lower than the threshold value, the scorer will determine the pin has fallen and score it as pinfall. The system has two light thresholds. One that is set up for normal operation and one that is set up for operation in low light conditions such as black lights, or times when lights over the bowling lanes are turned off. Refer to the figures titled *Pinsetting Menu* and *Pinsetting Window.*

To enter the setting page select:

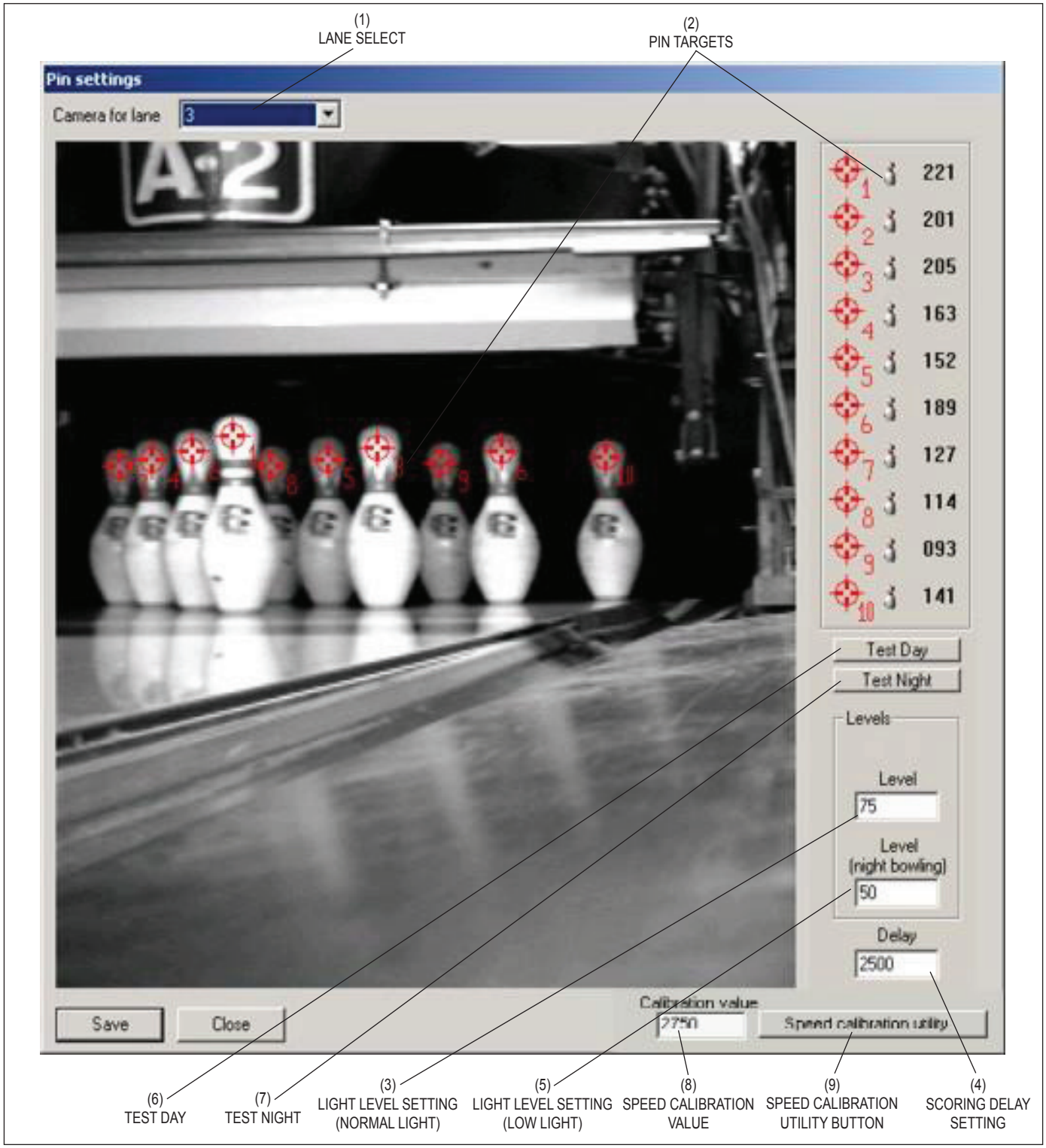
1. Select the “Settings” menu.
2. Select the “Pin settings” menu item.
3. Enter a password, if required.
4. Make desired changes.
5. Select the “OK” button.

NOTE:
The Vector program will automatically exit and restart when settings have been changed.



Pinsetting Menu.

(1) CHOOSE PIN SETTINGS



Pin Settings Window

(1) Lane Select - Drop down box used to select the lane for calibration.

(2) Pin Targets - The area where the camera looks to determine whether or not that pin is standing. Targets are positioned by dragging them from the target area and placing them over the proper pins. Once in position the light level (0 - 255) coming from the pin will be shown in target area.

(3) Light Level Setting (Normal Light) - Setting used to determine the minimum light level needed to detect a pin as standing during normal bowling conditions. *A good rule of thumb is to select a value midpoint between the level of light shown for the darkest pin and the level displayed when a target is positioned on the background.* Normally the preset level will be in the 80 to 100 range, but if the lighting is dimmer or brighter than normal, it may fall outside these values.

The **Level** should be set to a substantially lower value than the light level lowest level pin. Two camera pictures of the same lane, taken immediately after each other, can have different light levels. For this reason it is a good idea to take several pictures in order to see how much the light can vary. Also remember that during bowling, the camera pictures are taken when the sweep is down. This results in pictures that are somewhat darker than the pictures used during setup. It is important to allow for this when setting the levels.

(4) Scoring Delay - The "Delay" time, in milliseconds, controls when the scoring picture is taken. The time starts once the rake/sweep has left the home position and the its switch has opened. This value should be set to allow the rake/sweep to drop to the guard position before the picture is taken. The delay should not be so long that the desk/table can make contact with the top of the pins. If the interval is too short it may include pins just about to fall or the sweep board may block the camera from seeing the pins. If the delay is too long, the pinsetter deck or table may block the pins.

NOTE:
1500-3000 milliseconds is a typical setting for most pinsetters.

(5) Light Level Setting (Low Light) - An alternative light level setting that can be used to determine the minimum light level needed to detect a pin as standing. This is usually used to set a threshold for use during Cosmic or other low light situations. Use the selection located on the Lane Setting screen to determine which light level will be used.

(6) Test Day - Click this button to simulate how the camera will score when using the light level value entered in the Level box.

(7) Test Night - Click this button to simulate how the camera will score when using the light level value entered in the Level (Night Bowling) box.

(8) Speed Calibration Value - Enter a new value in this box to change the ball speed calculation. Increasing the value cause an increase in the ball speed shown on the overhead. Lower this value decreased the speed shown.

(9) Speed Calibration Utility Button - Click this button to run the ball speed calibration wizard.

Camera Calibration

To calibrate the camera, the pinsetter associated with the camera must be on with 10 pins standing on the pindeck. Perform the following steps to calibrate the camera to the pins:

1. Select the lane to be calibrated.

2. Using the mouse, drag the target for the Pin 1 from the column at the right side of the dialog box to the head of the pin 1. The number in the column on the right indicates the light level for that pin.

3. Repeat the previous step for all pins.

NOTE:
It is important to place the correct pin target on its corresponding pin; if not, incorrect scoring will occur.

4. Set the *initial* Light Threshold:

    a. Record the light value for all ten pins.
    b. Knock all ten pins over and record the light value for each pin.
    c. Select the "Level" field and enter a value midway between the lowest light level value recorded in *step a* and the light highest level recorded in *step b*.

NOTE:
The initial light level setting described is a good starting point for camera calibration. The actual light level used may be varied from this setting to accommodate different lighting and pin conditions, such as colored pins.

5. Set the *initial* Night Light Threshold:

    a. Set the bowling center's lighting up as it would be used during night bowling events such as cosmic bowling, black light bowling or other reduced lighting conditions.
    b. Record the light value for all ten pins.
    c. Knock all ten pins over and record the light value for each pin.
    d. Select the "Level" field and enter a value midway between the lowest light level value recorded in *step b* and the light highest level recorded in *step c*.

6. Set the Delay value:

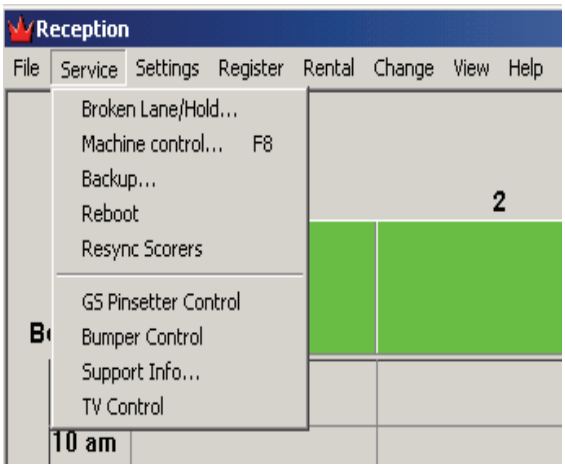
    a. Select the delay field.
    b. Enter the amount of delay between the time that the rake or sweep is triggered and when the camera should take the picture for scoring. This value should be set to allow the rake/sweep to drop to the guard position before the picture is taken. The delay should end before the rack/table begins to move. 1500-3000 milliseconds is a typical setting for most pinsetters.

7. When all camera settings have been made for this lane, select the "Save" button.

Service Menu

The "Service" menu is used to control various pinsetter functions. The selections important to the mechanic are Brocken Lane/Hold , Machine Control, and GS Pinsetter Control. Refer to the figure titled *Service Menu.*
To enter a service menu screen select:

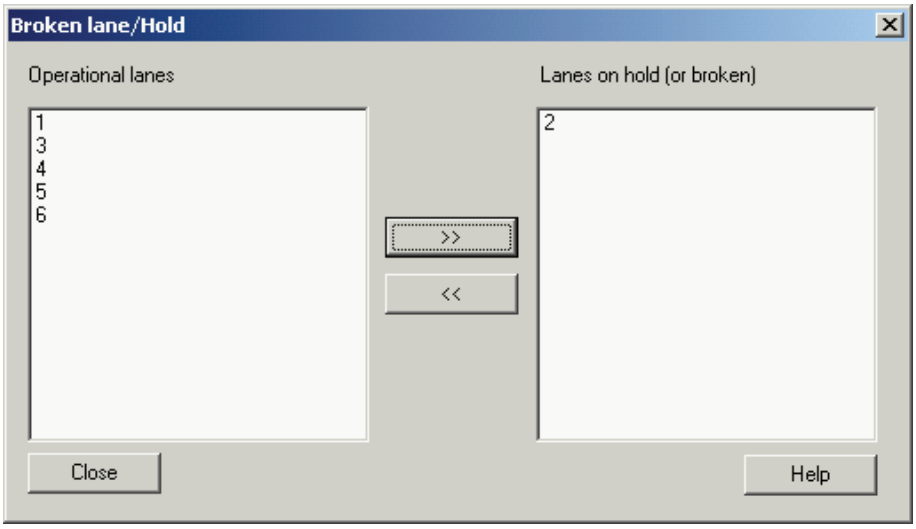
1. Select the "Service" menu.
2. Select the desired menu item.
3. Enter a password, if required.
4. Make desired changes.
5. Select the "OK" button.



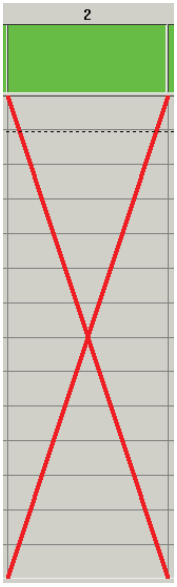
Service Menu

Broken Lane/Hold

This function is used to indicate that lanes are out of service or to place a lane that is currently issued to a customer on hold. When a time bowling lane is placed on hold, the amount of time that the lane is on hold is subtracted from the total amount due. Lanes that are broken or on hold will be displayed on the main lane status page with a large red letter X through the lane column. Refer to the figures titled *Broken Lane/Hold Window* and *Out Of Service Lane Indication.*



Broken Lane/Hold Window



Out Of Service Lane Indication

Machine Control

This function is used to control the pinsetters without issuing the lanes. Common uses include turning on machines to set pin fall cameras, resetting pins after conditioning the lanes and turning lanes of for maintenance procedures. Machine control functions can also be used on lanes that are issued. Refer to the figure titled *Machine Control Window.*

Machine Control Window

(1) **Lane** - Select which lanes will be affected.

(2) **Start** - The "Start" button is used to turn on the pinsetters on the selected lanes.

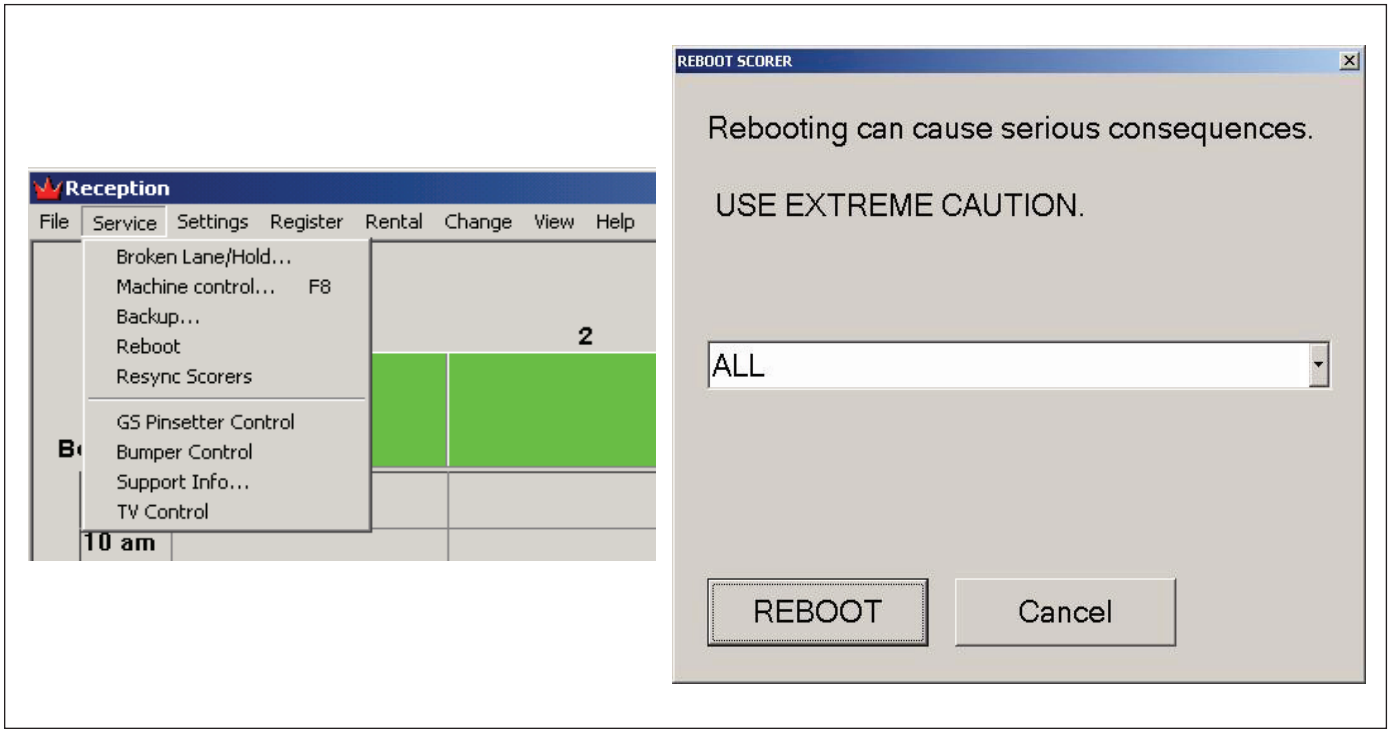
(3) **Stop** - The "Stop" button is used to turn off the pinsetters on the selected lanes.

(4) **Reset** - The "Reset" button is used to cycle the pinsetters on the selected lanes. The reset function is the same as the reset button found on the ball return.

Reboot

The Reboot function allows the user to reboot the Scorer Computers from the control desk. It is suggested that this be done daily. To reboot one or all of the Scorer Computers use the following procedure.

1. From within the Vector program running on the Front Desk Server, select the "Service" menu.
2. Select the "Reboot" menu item.
3. Using the drop down menu, select "All" to reboot each scoring computer or select the desired scoring computer if you only want to reboot one of them. Refer to figure titled **Scorer Computer Reboot**.
4. Select the "OK" button.
5. Select the "Yes" button to reboot the scoring computers.



Scorer Computer Reboot

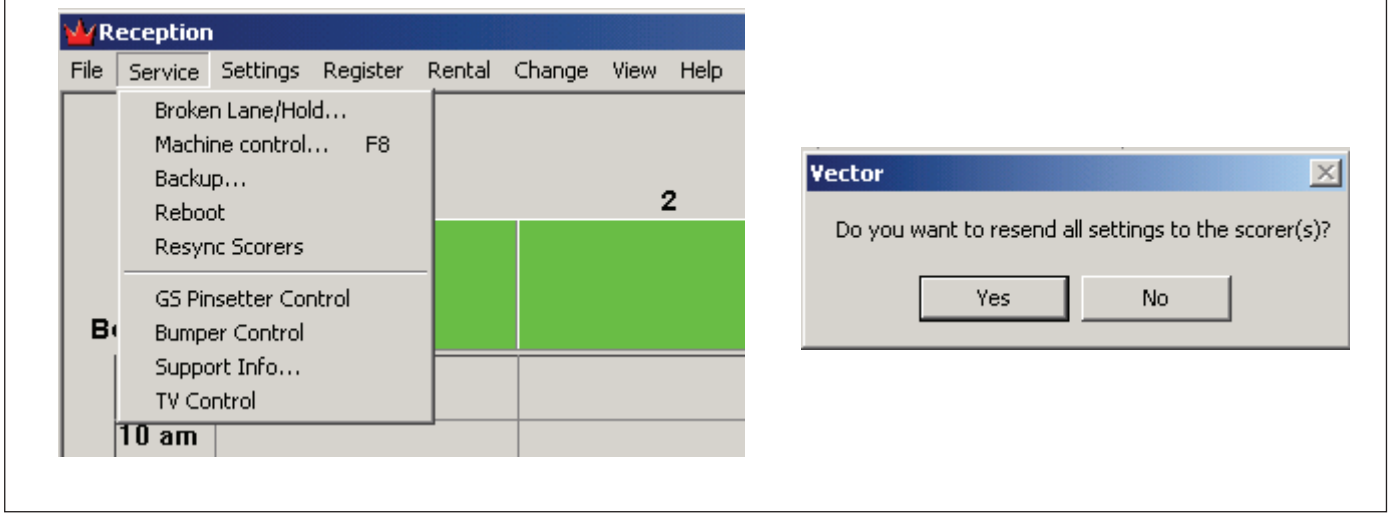
ReSync Scorers

This function is only available in Vector Version 3.02 and later. It allows the user to send configuration information to the Scorer Computers with the click of a button rather than having to refresh each of the configuration screens at the control desk. To perform a resync procedure do the following:

1. From within the Vector program running on the Front Desk Server, select the “Service” menu.

2. Select the “Resync Scorers” menu item.

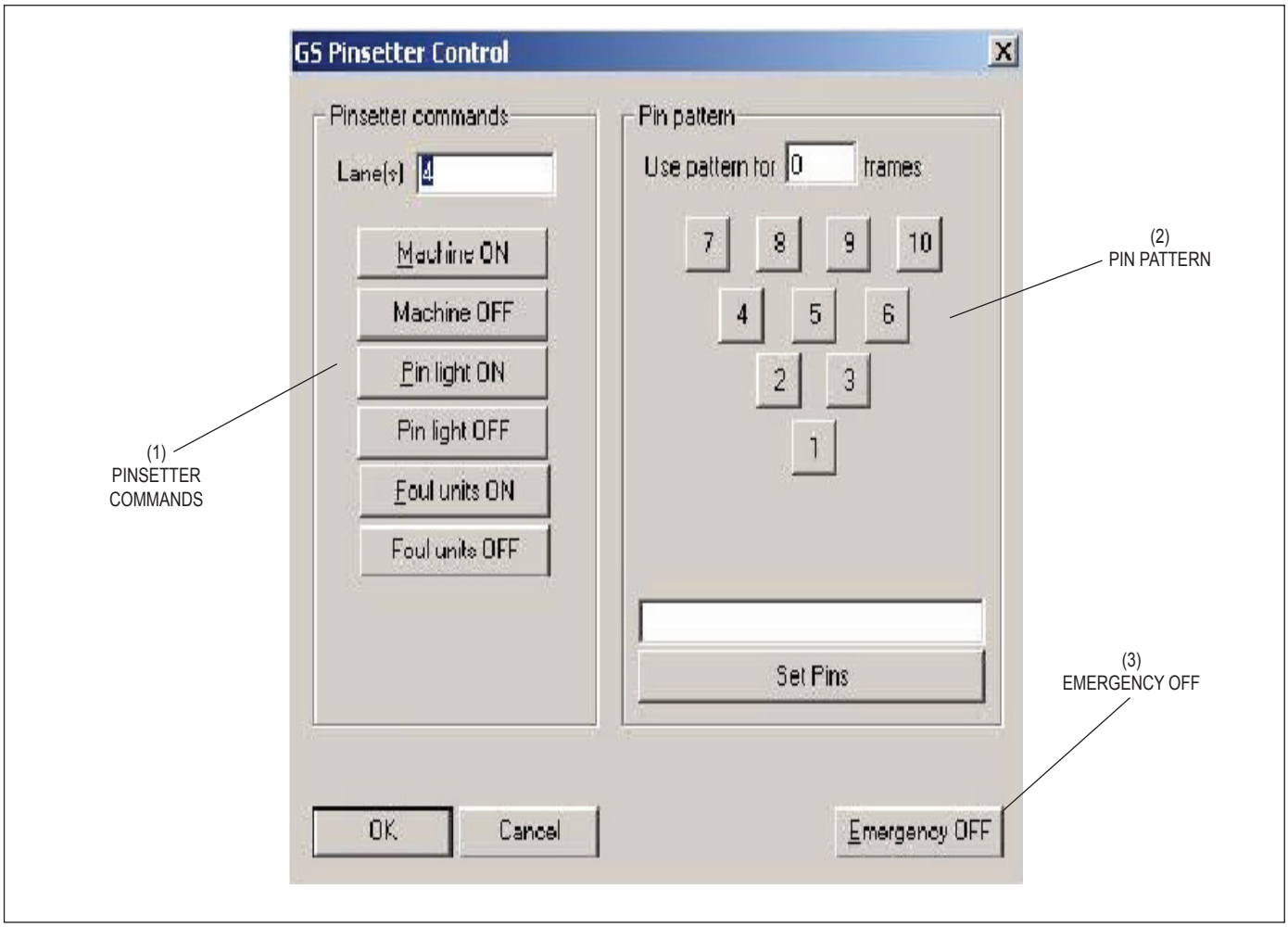
3. Select the “Yes” button to resync the scoring computers. Refer to the figure titled **Resync Scorers.**



Resync Scorers

GS Pinsetter Control

This function is used to control GS pinsetters without issuing the lanes. Common uses include turning on machines, spotting specific pins and turning lanes of for maintenance procedures. Refer to the figures titled *GS Pinsetter Control Window.*



GS Pinsetter Control Window

Pinsetter Commands Section

This section is used to send commands to the GS pinsetter. The following commands are available:

Machine On - This command will turn on the pinsetter for the selected lane or lane range.

Machine Off - This command will turn off the pinsetter for the selected lane or lane range.

WARNINIG!

Turning off GS pinsetters in this manner is not to be used in an emergency. The pinsetter will complete it's current cycle prior to turning off. If a pinsetter must be shut off in an emergency, then use the "Emergency Off" button.

Pin Light On - This command will turn on the pin deck lamp only for the selected lane or lane range.

Pin Light Off - This command will turn off the pin deck lamp only for the selected lane or lane range.

Foul Units On *- This command will turn on the foul units for the selected lane or lane range.

Foul Units Off * - This command will turn off the foul units for the selected lane or lane range.

**Foul unit control is only available in centers that have upgraded to Vector from BowlerVision or BowlerVision II.*

Pin Pattern Section

This section is used to control which pins the pinsetter spots. Typically this function is used to respot pins during competition. Any pin combination can be set on any lane from the front desk. This section can also be used to set up spare practice, by entering a number of frames other than zero in the "User Pattern for x Frames" field. For example, of 8 is entered in the field, whatever pin combination is selected will be set for eight consecutive frames. Pin selection can be made by pressing the button for a pin or by entering the pin number in the field at the bottom of this section. The "Set Pins" button causes the system to set the specified pins for the desired number of frames.

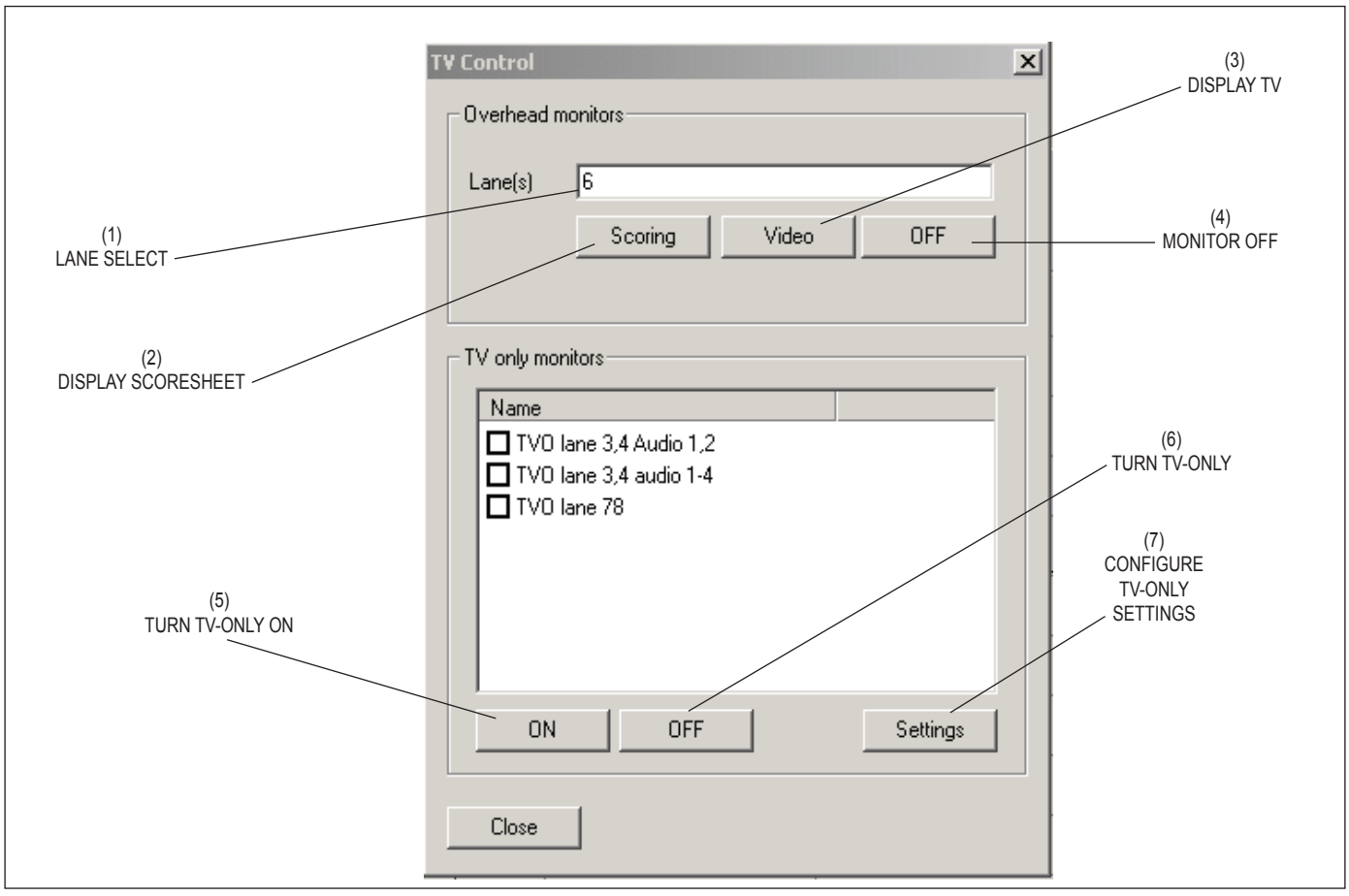
TV Control

The TV Control function is used to change the video display of the overhead monitors between the TV video signal provided by an A/V source such as a VCR or the scoresheet information from the scorer computer. The control can be used to turn the monitors off when not in use
Additionally, some centers may be equipped with overhead monitors that are used only for video display. These monitors may be placed in between the scoresheet monitors of a lane pair, or they may be placed between some or all lane pairs. The TV Control function is used to configure these monitors and to turn these monitors on and off. Refer to the figure titled **TV Control.**

To enter the TV control screen do the following:

1. From within the Vector program running on the Front Desk Server, select the "Service" menu.

2. Select "TV Control" from the drop down menu.



TV Control

The functions of the buttons on the TV Control screen are:

(1) **Lane Select** - Entry box used to select the lane or lane range for the standard overhead monitors to be controlled.

(2) **Display Scoresheet** - This button causes the overhead monitors entered in the lane select box to display scoresheet or advertising.

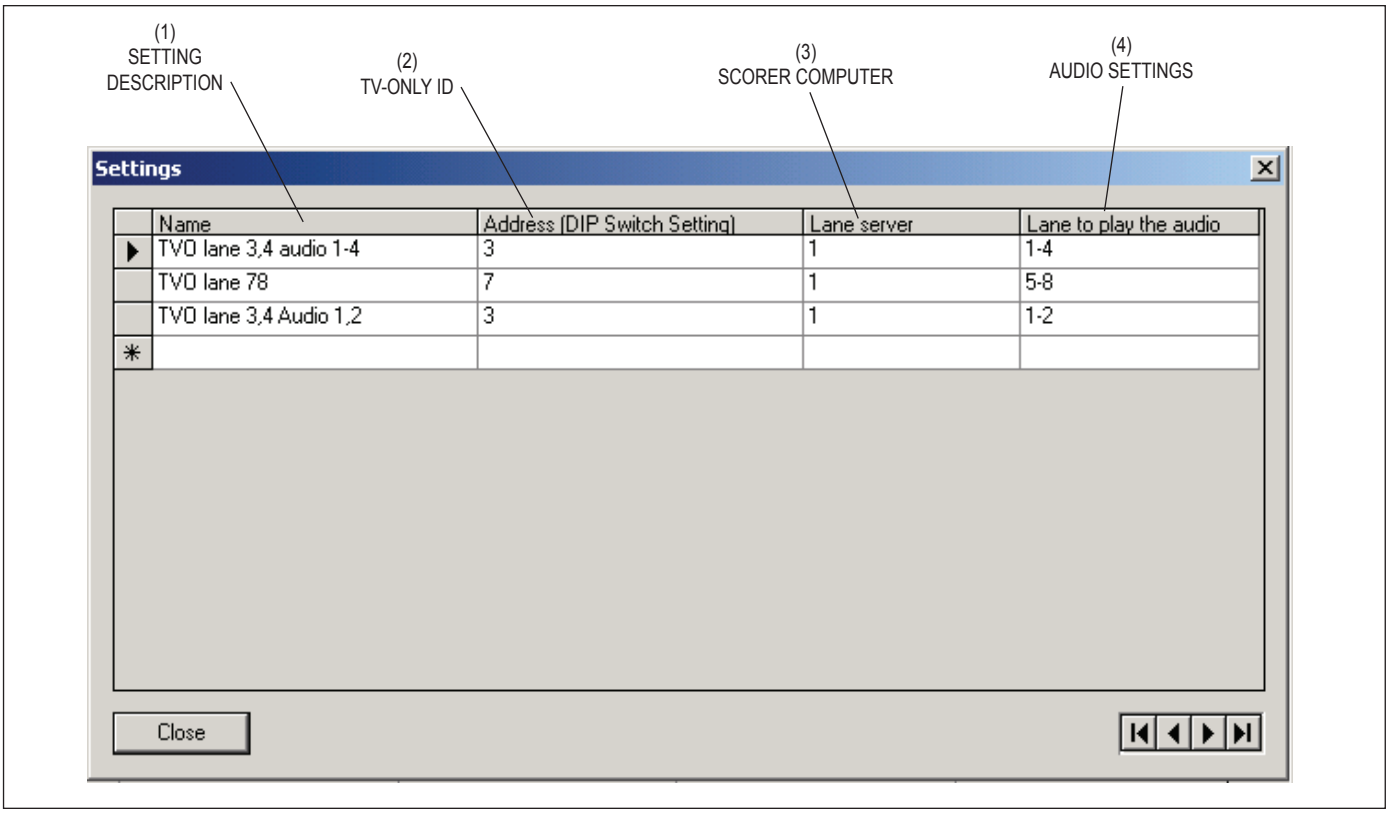
(3) **Display TV** - This button causes the overhead monitors entered in the lane select box to display TV video signal coming from the A/V source or Audio/Video (A/V) box.

(4) **Monitor Off** - This button causes the overhead monitors entered in the lane select box to turn off. This selection is typically it is used to turn off the monitors when the business is closed.

(5) **Turn TV-Only On** - Select this button to turn on the selected TV-Only monitors.

(6) **Turn TV-Only Off** - Select this button to turn on the selected TV-Only monitors.

(6) **Configure TV-Only Settings** - Select this button to display the TV-only configuration screen. Refer to figure titled **TV-Only Settings.**



TV-Only Settings

(1) Setting Description - This field is used to enter a name for the TV-Only monitor to be displayed on the TV Only monitor control page. This is a text field that allows letters and numbers to be entered. The name of the TV Only monitor typically is something descriptive about the monitor's location and were the audio is played.

(2) TV-Only ID - This field is used to identify the ID of the TV-Only monitor as set on the DIP switches inside the monitor. Standard setup is to set the ID to the left lane number that the monitor is associated with.

(3) Scorer Computer - This field is used to identify which scoring computer the TV Only monitor is connected to. This should be a number that corresponds to the scoring computer's name. For example, if the TV Only monitor is connected to the first scoring computer called "SLAVE1" or "Scorer Computer 1" the number one is entered in this field.

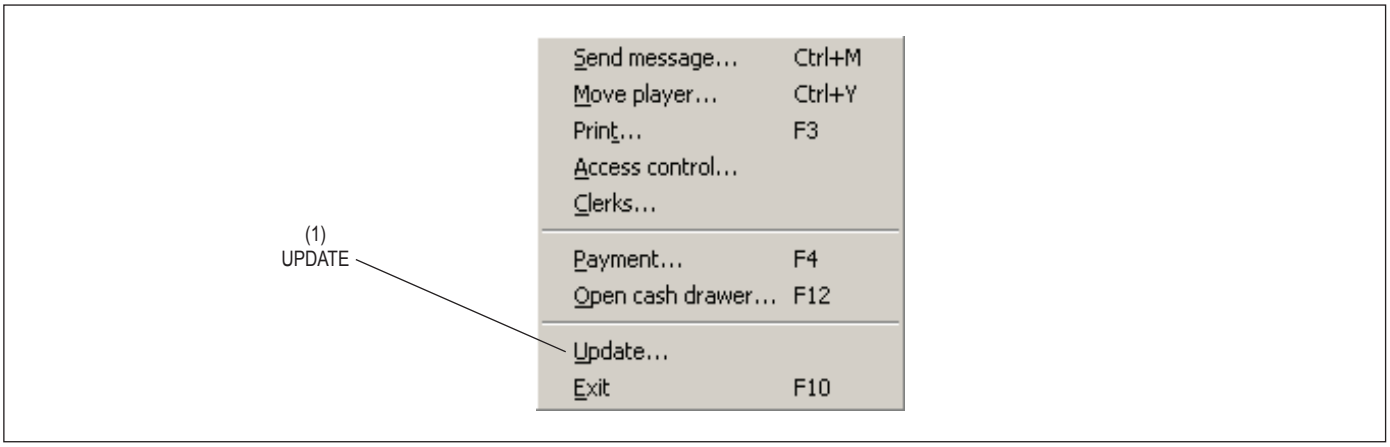
(4) Audio Settings- This field controls which lanes should receive the audio signal when the TV-Only monitor is turned on. For example, if the TV-Only monitor is located between lanes two and three, where should the audio be heard when the TV-Only monitor is turned on. It is possible to make multiple lines in this table for the same monitor to allow different configurations of the audio.

File Menu

The “File” menu is used to determine user access to the system, move players, and update the programming on Scorer computers. The selection that is important to the mechanic is Updating. Refer to the figure titled *File Menu.*

To enter a service menu screen select:

1. Select the “File” menu.
2. Select the Update menu item.
3. Enter a password, if required.



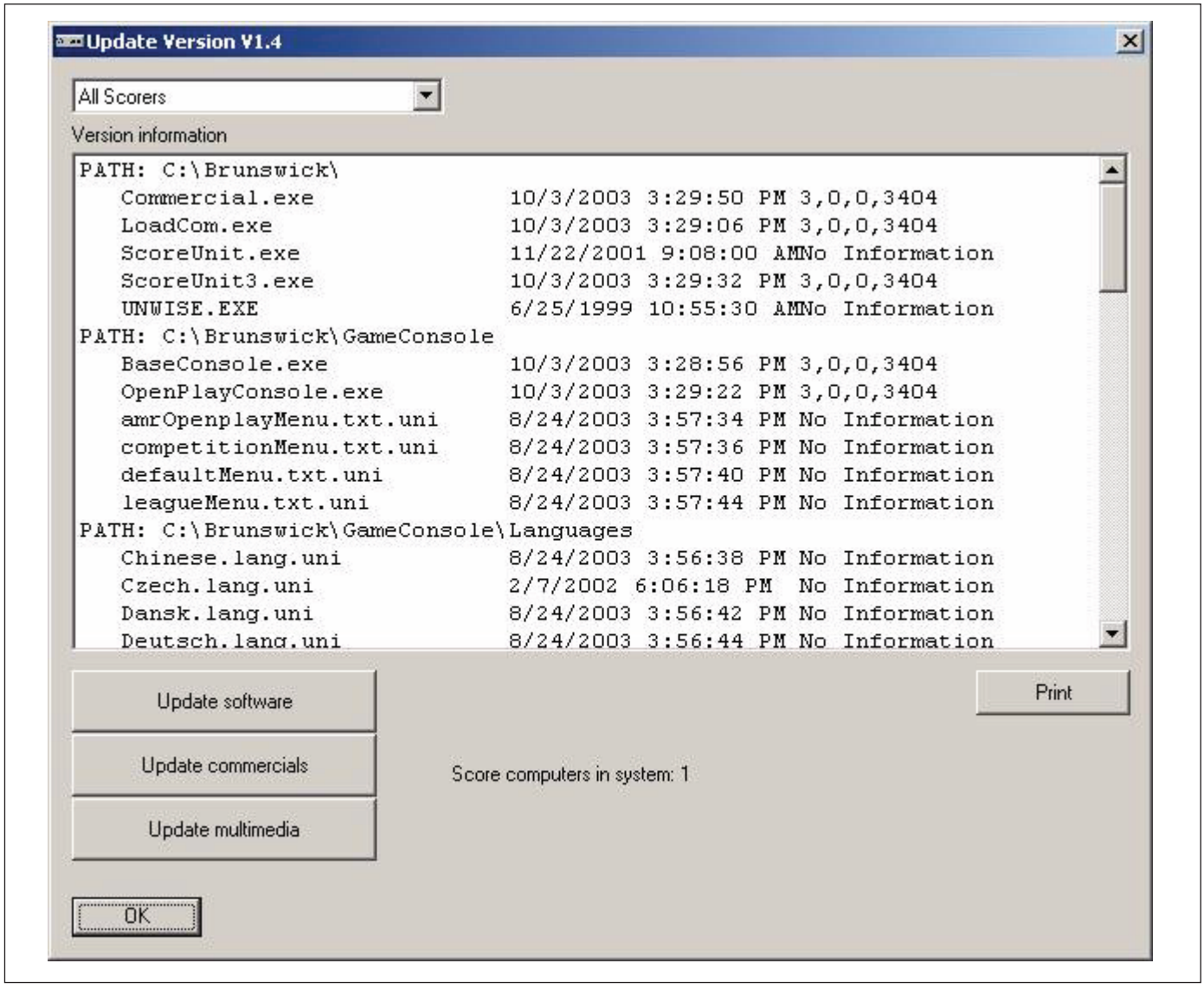
File Menu

(1) UPDATE

Updating Scorer Software

The update function sends new scoring computer software, commercial advertisements and/or exciter graphics and sound updates to the scorer computers.

Updates may be sent to individual scoring computers or to all scoring computers at the same time. Software, commercial advertisements and scorer exciter graphics and sounds must be updated as separate steps. The update function also displays information about the versions of the software currently installed on the scoring computers. This information is helpful when troubleshooting the system with a Brunswick Customer Response Center representative. Refer to figure titled *Update Window.*


Update Version V1.4
All Scorers
Version information
PATH: C:\Brunswick\
Commercial.exe 10/3/2003 3:29:50 PM 3,0,0,3404
LoadCom.exe 10/3/2003 3:29:06 PM 3,0,0,3404
ScoreUnit.exe 11/22/2001 9:08:00 AMNo Information
ScoreUnit3.exe 10/3/2003 3:29:32 PM 3,0,0,3404
UNWISE.EXE 6/25/1999 10:55:30 AMNo Information
PATH: C:\Brunswick\GameConsole
BaseConsole.exe 10/3/2003 3:28:56 PM 3,0,0,3404
OpenPlayConsole.exe 10/3/2003 3:29:22 PM 3,0,0,3404
amrOpenplayMenu.txt.uni 8/24/2003 3:57:34 PM No Information
competitionMenu.txt.uni 8/24/2003 3:57:36 PM No Information
defaultMenu.txt.uni 8/24/2003 3:57:40 PM No Information
leagueMenu.txt.uni 8/24/2003 3:57:44 PM No Information
PATH: C:\Brunswick\GameConsole\Languages
Chinese.lang.uni 8/24/2003 3:56:38 PM No Information
Czech.lang.uni 2/7/2002 6:06:18 PM No Information
Dansk.lang.uni 8/24/2003 3:56:42 PM No Information
Deutsch.lang.uni 8/24/2003 3:56:44 PM No Information
Update software
Update commercials
Update multimedia
Print
Score computers in system: 1
OK

Update Window

Updating Scoring Computer Software

1. Select the File menu.
2. Select the Update menu item.
3. Using the drop down menu at the top of the screen, select the scoring computer to be updated, or select “All” to update the software in all of the scoring computers.
4. Select the “Update Software” button.
5. While the software is being updated, the system will display a download status indicator.
6. When completed, select the “OK” button.
7. Follow the steps to reboot the scoring computer or computers that have been updated.

NOTE:
This process may take 2-5 minutes per scoring computer.

Updating Commercial Advertisement Graphics

1. Select the File menu.
2. Select the Update menu item.
3. Using the drop down menu at the top of the screen, select the scoring computer to be updated, or select “All” to update the software in all of the scoring computers.
4. Select the “Update Commercials” button.
5. While the commercials are being updated, the system will display a download status indicator.
6. When completed, select the “OK” button.
7. Follow the steps to reboot the scoring computer or computers that have been updated.

NOTE:
This process may take 2-5 minutes per scoring computer.

Updating Exciter Graphics and Sounds

1. Select the File menu.

2. Select the Update menu item.

3. Using the drop down menu at the top of the screen, select the scoring computer to be updated, or select “All” to update the software in all of the scoring computers.

4. Select the “Update Multimedia” button.

5. While the exciter graphics and sounds are being updated, the system will display a download status indicator.

6. When completed, select the “OK” button.

7. Follow the steps to reboot the scoring computer or computers that have been updated.

NOTE:
This may process may take 10-15 minutes per scoring computer.

Scorer Computer Synchronization

After Replacing the hard drive or updating the software on the Scorer Computer, the control desk computer and the Scorer Computer must be synchronized. To synchronize them perform the following steps:

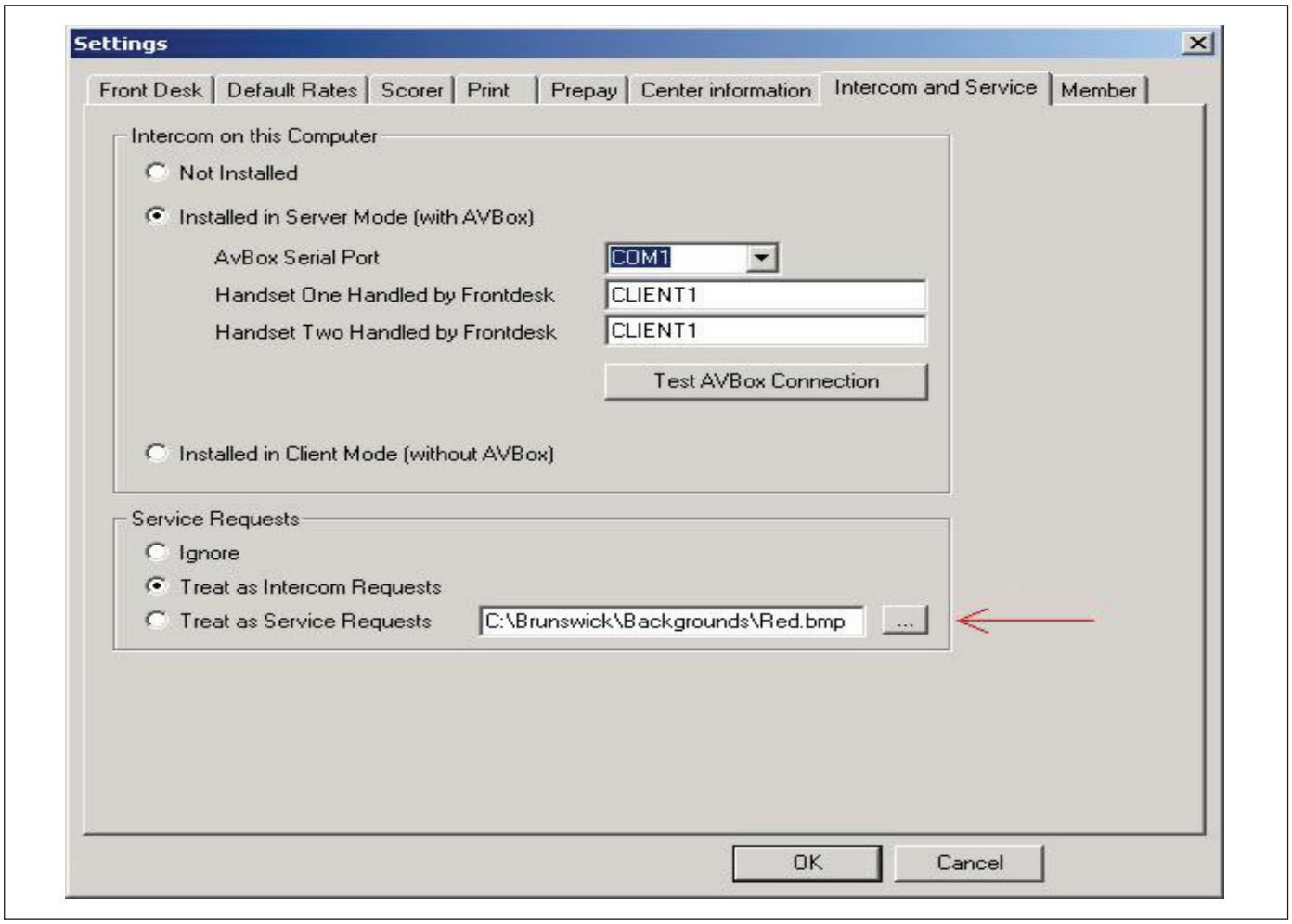
Vector Version 3.0 or prior

1. Wait until the Scorer Computer(s) have restarted and the communication indicator (i.e. green lane number bars) on the Vector Lane Status Screen have appeared.

2. Click on the Settings menu and choose Setup from the drop down menu.

3. Verify that the fields on each tab selection are set as desired.

4. Select the Intercom and Service Tab click the Browse button (small box with three dots) that is located in the Service Request area. Refer to figure titled *Intercom and Service Tab.*



Intercom and Service Tab

5. Double click on the File Red.bmp or select .bmp a file of your choice and click OK.

6. From the Setup window, Click the OK button again. The Vector program will restart automatically.

7. Click on the Settings menu and choose Lane settings from the drop down menu. Verify that the options are set as desired. Click the OK button.

NOTE:
If you need to update more than one scoring computer you will need to update each lane range separately. Use the Apply button instead of the OK button until you are on the last lane range tab, then use OK.

8. Click on the Settings menu and choose Volume from the drop down menu.

9. Adjust the slide bar to the desired level and click the OK button.

10. Press the F7 function key, highlight American League, and click the OK button.

11. Click the Config button, the OK button and then the Cancel button.

12. Press the F2 key to display the Open Play window. Ensure that there is no personnel or equipment on the lanes or the pinsetters. In the Lane text box type in the lane range for the center i.e. 1-24, then select Start.

13. Verify that all the lanes turn on with score sheets.

14. Click on the Stop button in the top right corner and type in the lane range for the center in Lanes text box. Click the OK button to shut down all the lanes.

Vector Version 3.2 or higher

1. Wait until the Scorer Computer(s) have restarted and the communication indicator (i.e. green lane number bars) on the Vector Lane Status Screen have appeared.

2. Click on the Service menu and choose Resyc Scorers from the drop down menu.

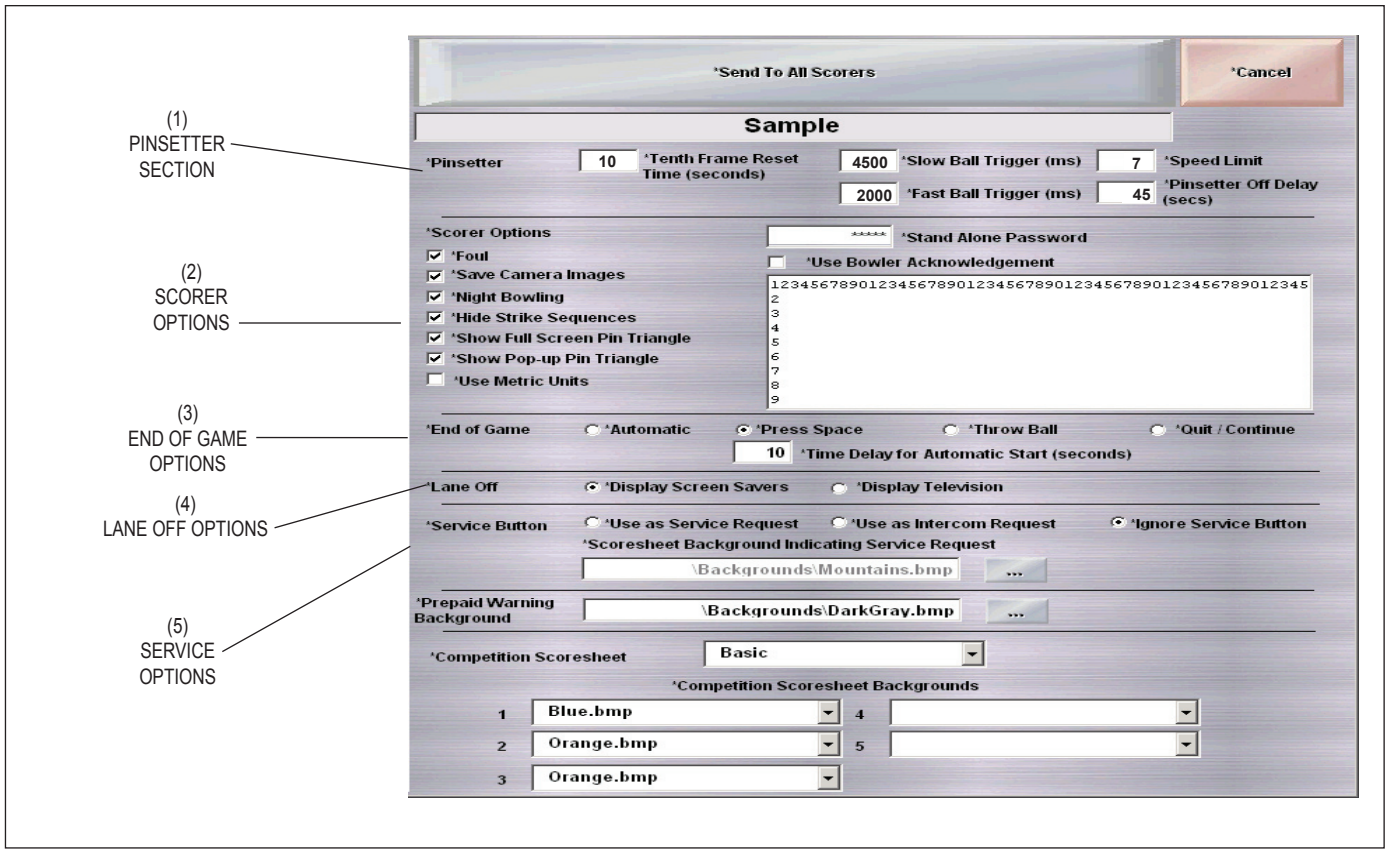
Vector Plus Control Desk Screens

Even though Desk operations are not within the scope of this manual, certain control desk functions such as configuring the system or downloading information to the scorer computers should be understood by the center mechanic. These selections can be found on Vector Plus' Lane Status screen or as an icon on the Windows desktop.

Vector Settings

The "Vector Settings" button on the Lane Status screen is used to control various system settings. The selections important to the mechanic are Scoring Settings, Audio Video, and Pin Camera Settings.

Scoring Settings



Scorer Settings Screen

1) PINSETTER SECTION
(2) SCORER OPTIONS
(3) END OF GAME OPTIONS
(4) LANE OFF OPTIONS
(5) SERVICE OPTIONS

Pinsetter Section

The "10th Frame Reset" time field controls how long the scorer should wait after the third ball in the tenth frame is bowled, before the machine is triggered. This setting must allow for the machine to complete the previous cycle. If the machine is triggered while it is still in motion from the previous cycle, the machine will ignore the trigger, and it will appear that the machine is not resetting automatically after the third ball of the tenth frame. In some situations it may cause the machine to stop in mid cycle. If the delay is set too long the machine may cycle when a bowler isn't expecting it, especially if they manually triggered the machine while waiting for the automatic trigger.

NOTE:
A good starting value for "10th Frame Reset" is 10 seconds.

The "Slow Ball Trigger" field is used to set the amount of delay from the time a slow ball breaks the ball detect beam until the pinsetter is triggered. Systems that use pinfall cameras will also calculate the ball's speed. When the ball speed is below the value set in the "Speed Limit" field, the system uses the "Slow Ball Trigger" value. When the ball speed is higher than the value set in the "Speed Limit" field, the system uses the "Fast Ball Trigger" value.

NOTE:
A good starting value for "Slow Ball Trigger" is 10 seconds.

The "Fast Ball Trigger" field is used to set the amount of delay from the time a fast ball breaks the ball detect beam until the pinsetter is triggered. Systems that use pinfall cameras will also calculate the ball's speed. When the ball speed is higher than the value set in the "Speed Limit" field, the system uses the "Fast Ball Trigger" value. When the ball speed is below the value set in the "Speed Limit" field, the system uses the "Slow Ball Trigger" value.

NOTE:
A good starting value for "Slow Ball Trigg" is 4500 ms. For "Fast Ball Trigger" 2000 ms is a good starting value.

The "Speed Limit" field is used to set the threshold between the "Slow" and "Fast" ball speeds which is used to control the delay before the machine is automatically triggered.

NOTE: *A good starting value is 7.*

The "Pinsetter Off Delay" field is used to control how many seconds the pinsetter remains on after prepaid bowling has expired. This value should be set so that bowlers do not think that they can take extra shots, yet preventing the pinsetter from turning off before bowling balls are returned, which would cause an underlane ball return call.

NOTE: *A good starting value is 45 seconds.*

End Of Game Options
This section controls what the scorer will do when a game of bowling is completed, and how it will interact with the bowler to start the next game. The following options are available:

Auto - This option will automatically clear the score sheet and start the next game after the delay specified in the "Time Delay for Automatic Starts" box. No bowler interaction is necessary.

Throw Ball - This option will automatically clear the score sheet and start the next game only after the bowler throws the first ball for the next game.

Press Space - This option will prompt the bowler to press the space key on the keyboard or LCD Touch Screen. If the bowler does not press the space key within the number of seconds entered in the field, the system will automatically clear the score sheet and start the next game.

Quit/Continue - This option will ask the bowler whether or not they wish to continue bowling. If they select quit, the lane will turn off. If they select continue the system will automatically clear the score sheet and start the next game.

Lane Off Section
This section controls what will be displayed on the overhead monitors after the lane is turned off. The following two options are available:

Screen Savers - When this option is select the system will display the Advertising graphics which are used as screen savers. The Advertising graphics are stored in the C:\Brunswick\Media\Commercial directory. Advertising graphics must be properly named. The naming convention used by the system is: PauseX.EXT where X equals a sequential number starting with one. Advertisements will play in this sequence. And EXT equals the extension from one of the file formats. There are three possible Advertising graphic file formats. The system supports the following formats:

Windows Bitmap (.BMP) - 500 x 280 resolution and 256 colors.

Vector Slideshow (.DLT) - This format is a special format that combines a series of bitmap graphics into a animated show. Use the BMP2DLT.exe converter found in the C:\Brunswick\Utility directory to convert bitmap graphics into Vector Animations.

MPEG (.MPG) - This format is digital video and usually comes from a source such as a video camera. The system supports MPEG1.

TV - When this option is selected the system will display the video signal provided to the Audio/Video box located at the front desk when lanes are turned off.

Scorer Options

This section controls the following scorer and system options:

Foul - This option controls whether or not the scorer will score a foul when the automatic foul detector senses a foul. If this option is enabled, a score of F with a numeric value of zero will be scored when a bowler crosses the foul line and the foul unit registers a foul.

Save Camera Images - This option controls whether or not the system will save every pinfall camera image for the current day. If this option is on, the mechanic can see the stored pinfall camera images for troubleshooting scoring problems. The mechanic can see the pinfall camera images on the Print-Games menu with the "Photos" option selected. Pinfall images are only saved for the current day. This option can not be enabled after the fact to look for intermittent scoring problems. It must be enabled prior to bowling.

Night Bowling - This option controls which light level threshold is used from the "Pin Settings" menu. When this option is selected, the night light level will be used for scoring. If this option is not selected the normal light level will be used for scoring.

Hide Strike Sequences - This option controls whether or not the scorer will display the running score for strings of strikes. If this option is selected, the scorer will not show the score for a string of strikes until the string ends. If this option is not selected the scorer will immediately display the running score during a string of strikes.

Show Full Screen Pin Triangle - This option controls whether or not the "Full Screen Pin Triangle" will be displayed after the first ball of a frame when pins were left standing. This display completely obscures the scoresheet for a short period of time. The benefit to this display is that there is a place to display a small advertising message. There can be an unlimited number of advertising messages displayed on the full screen pin triangle. They are stored in the C:\Brunswick\Media\Commercial\Thumbnail directory. The advertising graphics must be 260 pixels wide, 70 pixels tall and 256 colors. The graphics must have a .bmp extension, but there is no other naming convention. This option can be used in conjunction with the "Pop Up Pin Triangle" Option.

Show Pop Up Pin Triangle - This option controls whether or not the pop-up pin triangle will be displayed after the first ball of a frame when pins were left standing. This display is slightly less than one quarter of the screen, and moves around the screen so that the current score is usually visible. This display is not removed until the second ball is thrown. This option can be used in conjunction with the "Full Screen Pin Triangle" option.

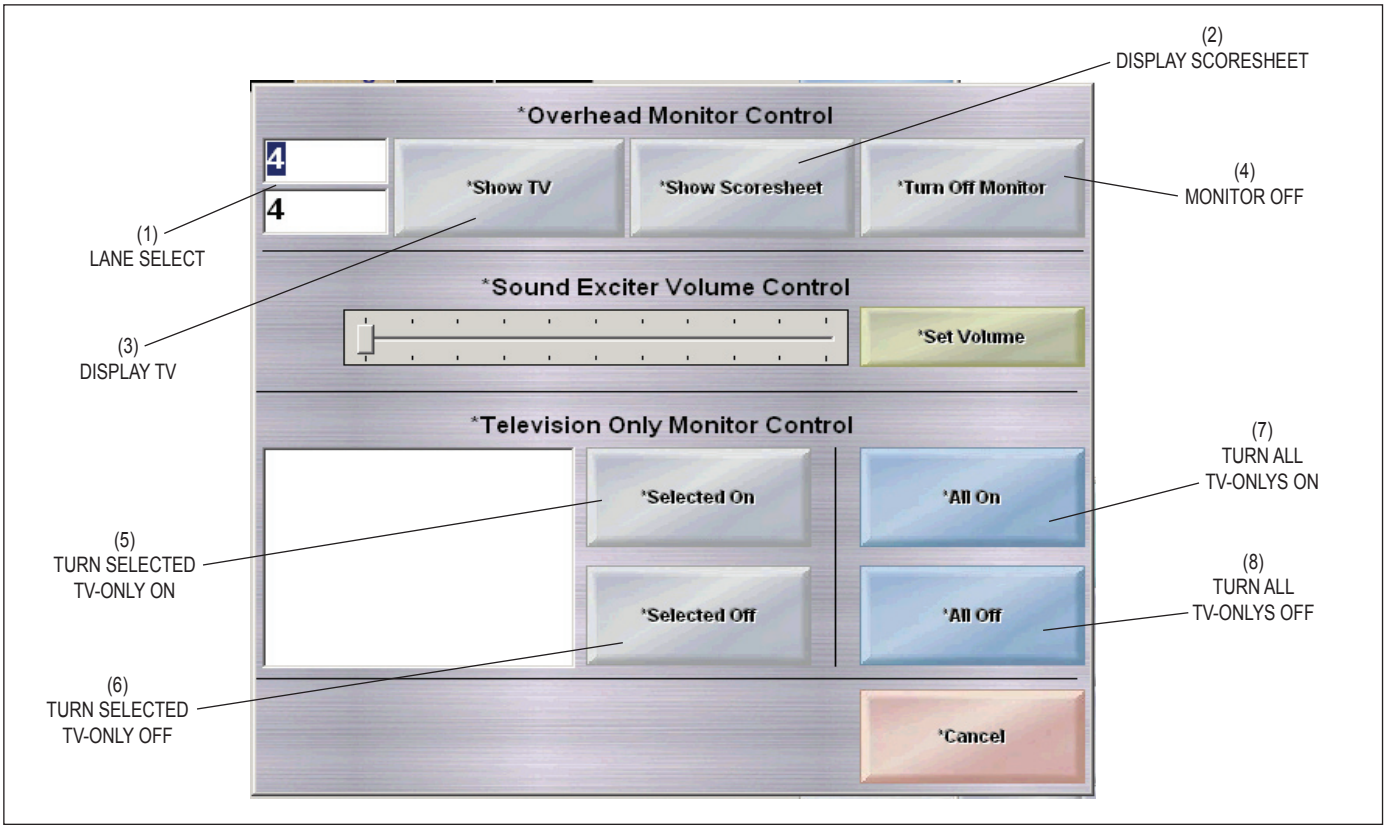
Use Metric Units - This option controls whether the system will display ball speed in Miles Per Hour (MPH) or Kilometers Per Hour (KPH) on the scoresheet. This also controls which whether MPH or KPH is entered in the "Speed Limit" field of the "Machine" section.

Stand Alone Password - This option controls whether or not the scorer will ask for a password when in stand-alone mode. If the password field is blank the bowler will NOT be prompted for a password when using the console in stand alone mode.

Audio Video

The Audio Video button is used to control the video display of the overhead monitors. Overhead monitors can display the video signal provided to the Audio/Video (A/V) box or scoresheet information from the scorer. Overhead monitors usually display advertising messages on lanes that are not being used, but these monitors can also be turned off. The Audio Video button is also used to turn optional TV-Only monitors on and off.

Additionally, the volume level for the Exciter audio played through the console speakers is set on this screen. Refer to the figure titled *Audio Video Screen.*



Audio Video Screen

The functions of the buttons on the Audio Video screen are:

(1) **Lane Select** - Entry box used to select the lane or lane range for the regular overhead monitors to be controlled.

(2) **Display Scoresheet** - This button causes the overhead monitors entered in the lane select box to display scoresheet or advertising.

(3) **Display TV** - This button causes the overhead monitors entered in the lane select box to display TV video signal coming from the Vector system at the Audio/Video (A/V) box.

(4) **Monitor Off** - This button causes the overhead monitors entered in the lane select box to turn off. Typically it is used to turn off the monitors when the business is closed.

(5) **Turn Selected TV-Only On** - Select this button to turn on the selected TV-Only monitors.

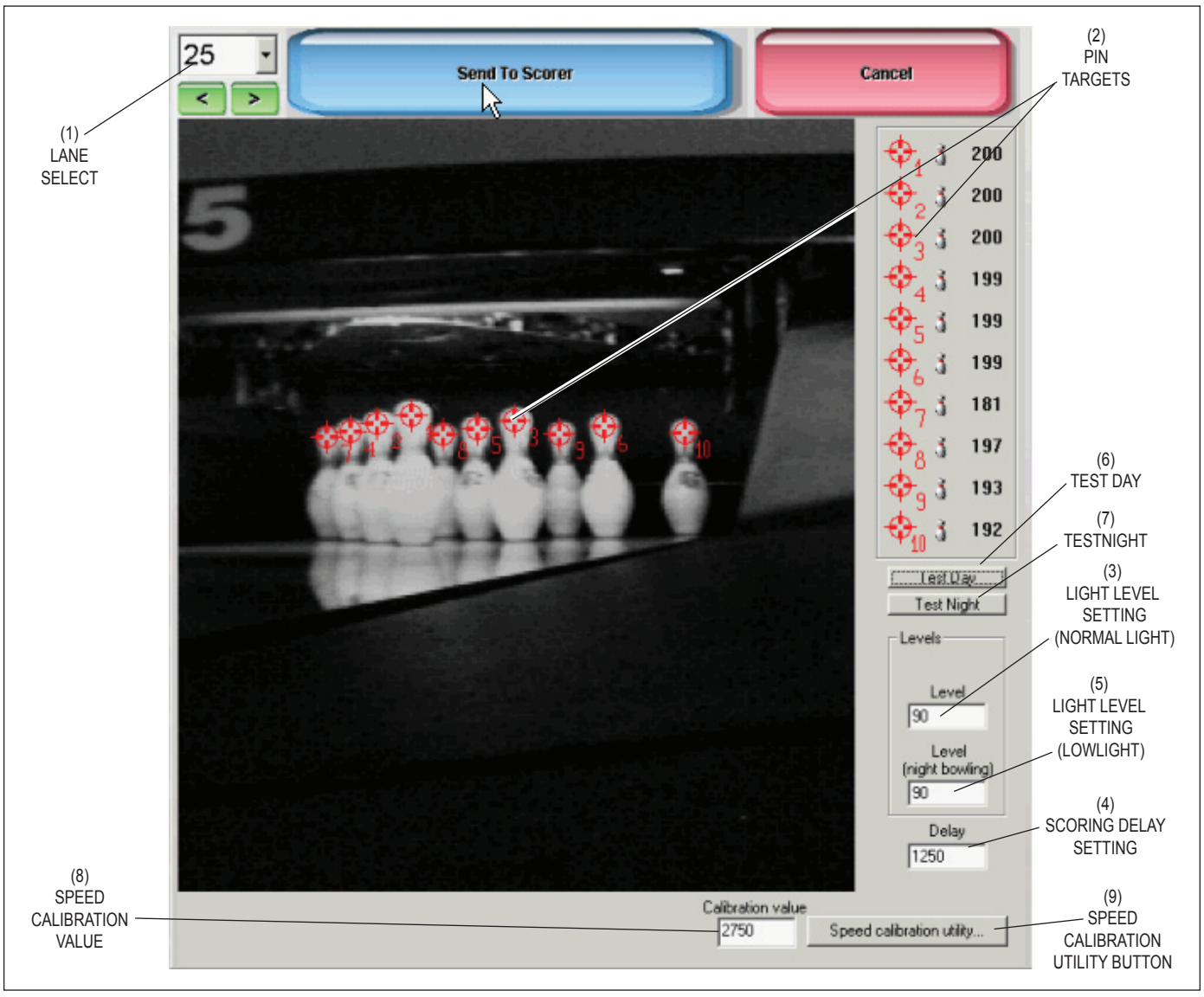
(6) **Turn Selected TV-Only Off** - Select this button to turn on the selected TV-Only monitors.

(7) **Turn All TV-Only's On** - Select this button to turn on all TV-Only monitors.

(8) **Turn All TV-Only's Off** - Select this button to turn off all TV-Only monitors.

Pin Camera Settings

The "Pin Camera Settings" function is used to control the operation of the Pinfall Camera. After a preset time delay the score is determined by comparing the light level in a target area with a threshold or reference value. If the light level inside the target is higher than the threshold value, the scorer will determine the pin is standing. If the light level inside the target is lower than the threshold value, the scorer will determine the pin has fallen and score it as pinfall. The system has two light thresholds. One that is set up for normal operation and one that is set up for operation in low light conditions such as black lights, or times when lights over the bowling lanes are turned off. Refer to the figure titled *Pin Camera Screen.*



Pin Camera Settings

(1) Lane Select - Drop down box used to select the lane for calibration.

(2) Pin Targets - The area where the camera looks to determine whether or not that pin is standing. Targets are positioned by dragging them from the target area and placing them over the proper pins. Once in position the light level (0 - 255) coming from the pin will be shown in target area.

(3) Light Level Setting (Normal Light) - Setting used to determine the minimum light level needed to detect a pin as standing during normal bowling conditions. *A good rule of thumb is to select a value midpoint between the level of light shown for the darkest pin and the level displayed when a target is positioned on the background.* Normally the preset level will be in the 80 to 100 range, but if the lighting is dimmer or brighter than normal, it may fall outside these values.

The **Level** should be set to a substantially lower value than the light level lowest level pin. Two camera pictures of the same lane, taken immediately after each other, can have different light levels. For this reason it is a good idea to take several pictures in order to see how much the light can vary. Also remember that during bowling, the camera pictures are taken when the sweep is down. This results in pictures that are somewhat darker than the pictures used during setup. It is important to allow for this when setting the levels.

(4) Scoring Delay - The "Delay" time, in milliseconds, controls when the scoring picture is taken. The time starts once the rake/sweep has left the home position and the its switch has opened. This value should be set to allow the rake/sweep to drop to the guard position before the picture is taken. The delay should not be so long that the desk/table can make contact with the top of the pins. If the interval is too short it may include pins just about to fall or the sweep board may block the camera from seeing the pins. If the delay is too long, the pinsetter deck or table may block the pins.

NOTE:
1500-3000 milliseconds is a typical setting for most pinsetters.

(5) Light Level Setting (Low Light) - An alternative light level setting that can be used to determine the minimum light level needed to detect a pin as standing. This is usually used to set a threshold for use during Cosmic or other low light situations. Use the selection located on the Lane Setting screen to determine which light level will be used.

(6) Test Day - Click this button to simulate how the camera will score when using the light level value entered in the Level box.

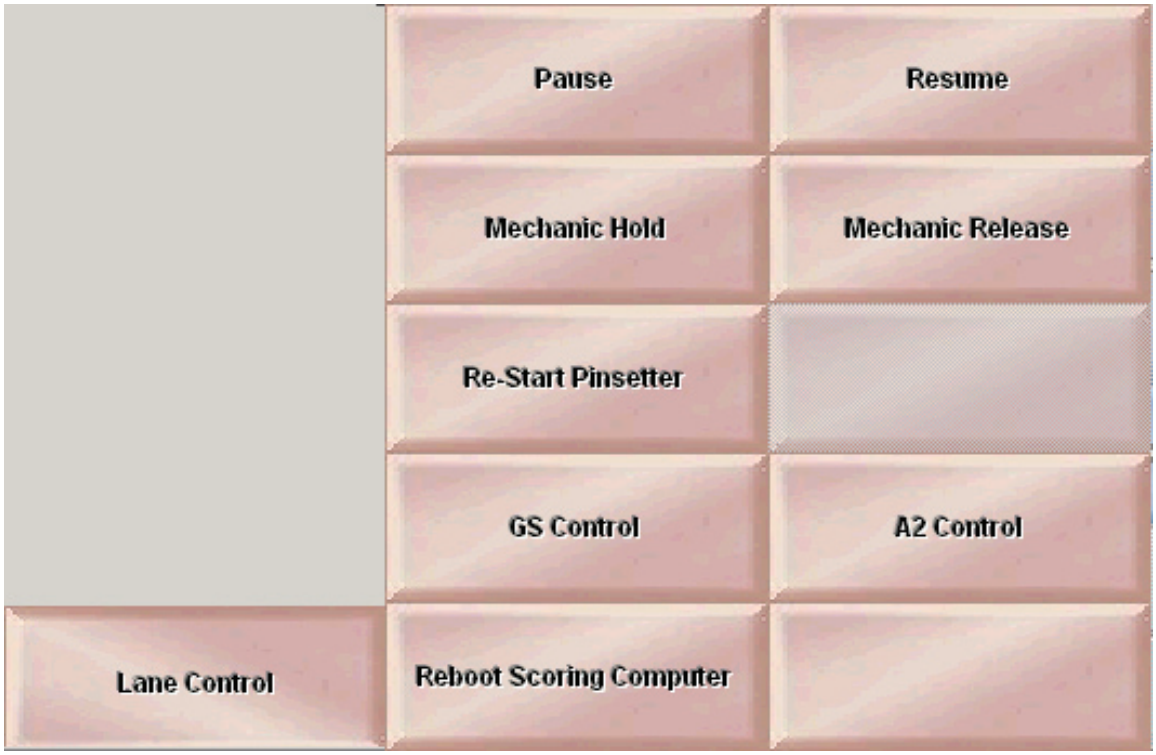
(7) Test Night - Click this button to simulate how the camera will score when using the light level value entered in the Level (Night Bowling) box.

(8) Speed Calibration Value - Enter a new value in this box to change the ball speed calculation. Increasing the value cause an increase in the ball speed shown on the overhead. Lower this value decreased the speed shown.

(9) Speed Calibration Utility Button - Click this button to run the ball speed calibration wizard.

Lane Control

The “Lane Control” button on the Lane Status screen is used to manually control pinsetter functions and to reboot the scorer computers. Refer to figure titled *Lane Control Buttons*.

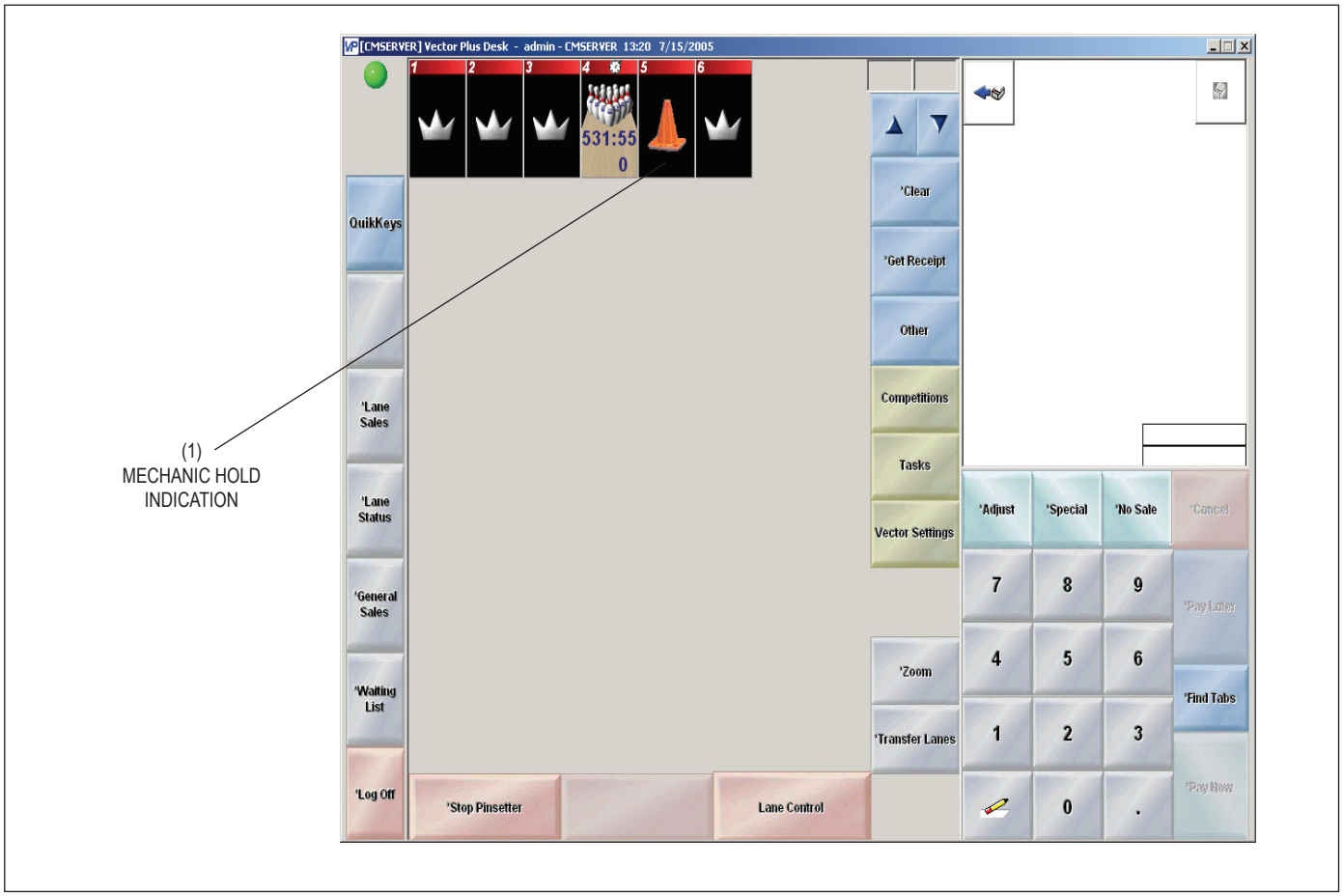


Lane Control Buttons.

Mechanic Hold / Mechanic Release

This function is used to indicate that lanes are out of service or to place a lane that is currently issued to a customer on hold. When a time bowling lane is placed on hold, the amount of time that the lane is on hold is subtracted from the total amount due. Lanes that are broken or on hold will be displayed with an orange construction pylon.

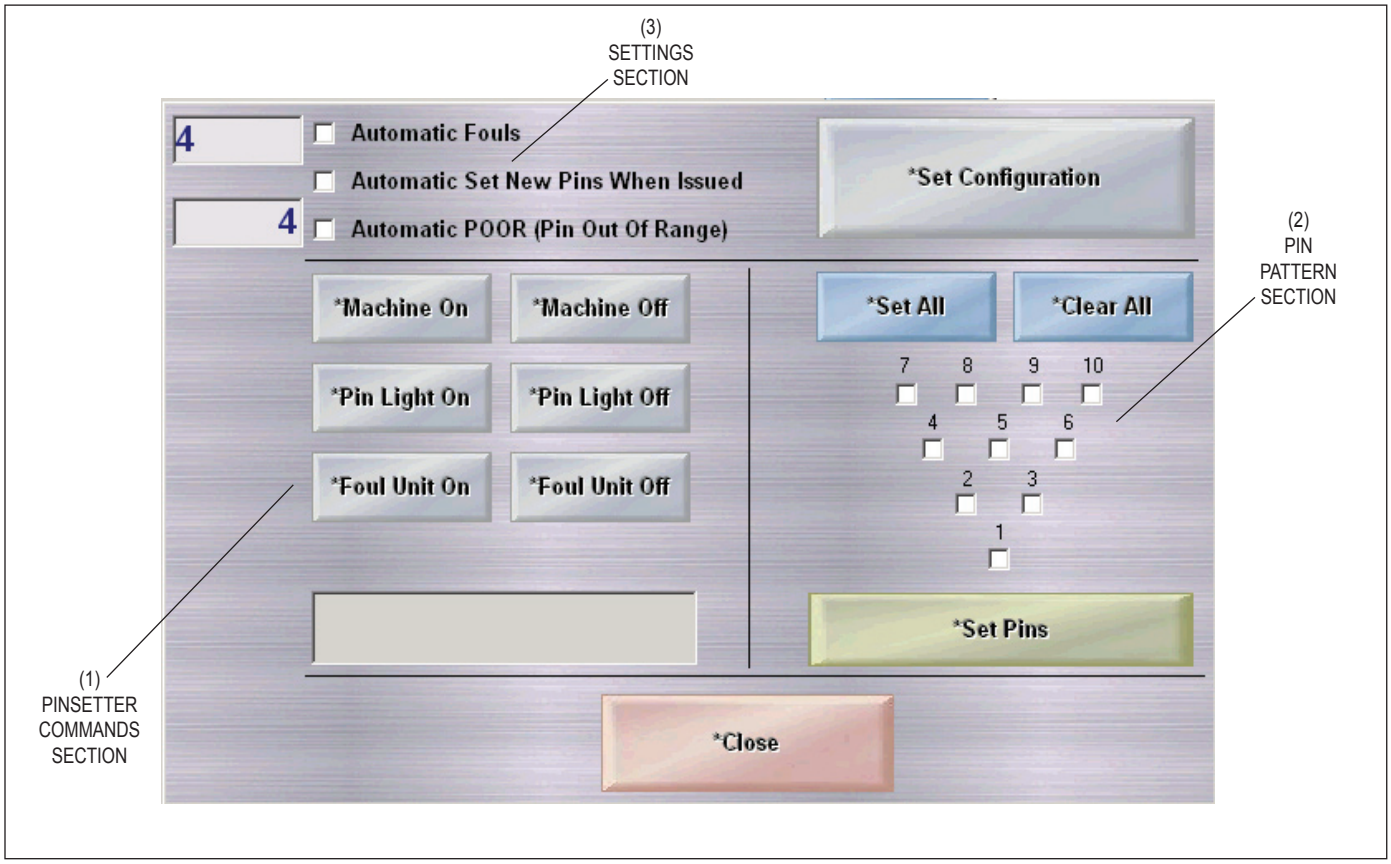
To put a lane on hold select the lane and click on “Mechanic Hold”. To release the lane click on “Mechanic Release”. Refer to the figures titled *Lane Control Buttons and Mechanic Hold Indication.*



Mechanic Hold Indication

GS Pinsetter Control

This function provides the capability to turn the pinsetters on/off, set specific pins and turn on the pinlight without actually turning on the pinsetter. For earlier versions of Vector Plus, selections for how to handle fouls, out-of-range pins, and whether to automatically set a new rack of pins when the lane is assigned was included. In later versions, this these function were relocated to the Lane Settings screen. Refer to the figures titled *GS Pinsetter Control Window.*



GS Pinsetter Control Window

(1) Pinsetter Commands Section

This section is used to send commands to the GS pinsetter. The following commands are available:

Machine On - Select this button to turn on the pinsetter for the selected lane or lane range.

Machine Off - Select this button to turn off the pinsetter for the selected lane or lane range.

WARNING!

Turning off GS pinsetters in this manner is not to be used in an emergency. The pinsetter will complete it's current cycle prior to turning off. If a pinsetter must be shut off in an emergency, then use the "Stop Pinsetter" button located on the lane status screen.

Pin Light On - Select this button to turn on the pin deck lamp for the selected lane or lane range.

Pin Light Off - Select this button to turn off the pin deck lamp for the selected lane or lane range.

Foul Units On *- Select this button to turn on the foul units for the selected lane or lane range.

Foul Units Off *- Select this button to turn off the foul units for the selected lane or lane range.

**Foul unit control is only available in centers that have upgraded to Vector from BowlerVision or BowlerVision II.*

(2) Pin Pattern Section

This section is used to respot pins during competition. Any pin combination can be set on any lane from the front desk. Pin selection is made by clicking on the box below the pin position. If a full rack of pins is desired click on "Set All" to select all pins. "Clear All" will clear all pin selection boxes. Once the desired pins are selected click the "Set Pins" button to set the specified pins.

(3) Settings Section

This section is used to control various GS Pinsetter options. These selection are only available on this screen in earlier versions of Vector Plus. In later versions, this these function are relocated to the Pinsetter Settings screen. The following options are available:

Automatic Fouls - This option controls whether the pinsetter will react to a foul signals received from GS pinsetter. When the option is enabled, the pinsetter will perform a foul cycle by sweeping standing pins and setting a full rack 2nd ball. If disabled the pinsetter will cycle normally. In either case the scorer will score an "F". When the Foul function in the GS pinsetter is disabled the these settings are not functional.

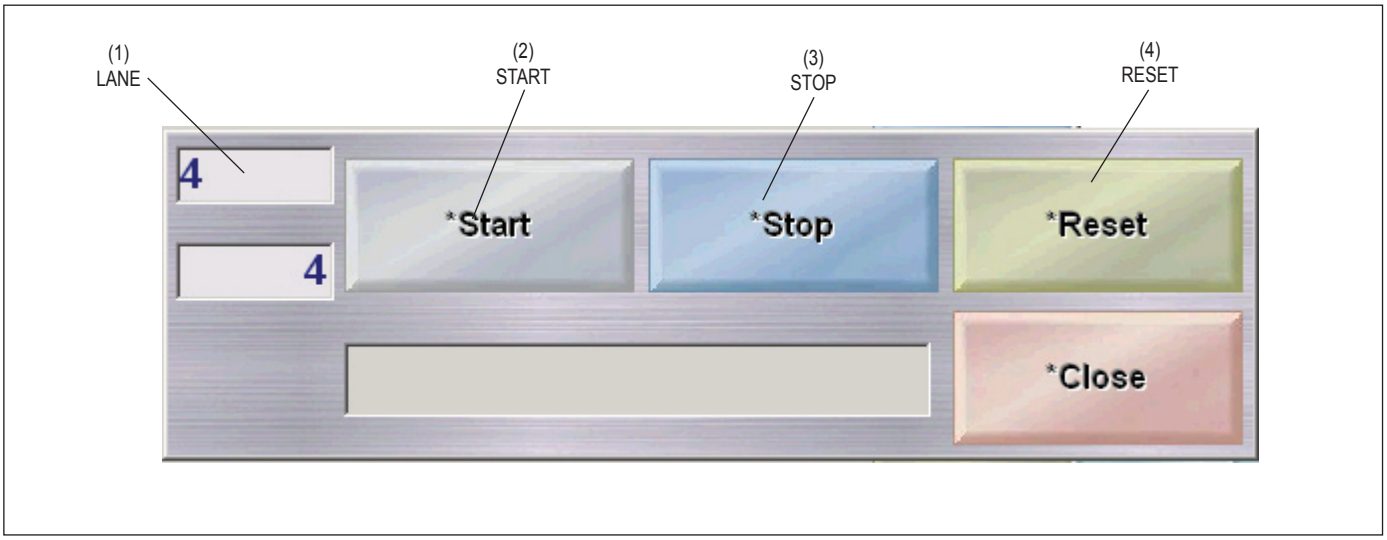
Automatic Set New Pins When Issued - This option controls whether the pinsetter will sweep the pin deck and set a new rack of pins when the pinsetter is assigned to bowling.

Automatic POOR (Pin Out Of Range) - This option controls whether the pinsetter will automatically handle pins that are out of range by sweeping the deck clear, scoring zero pins, and allowing the bowler to continue bowling or black out and wait for the mechanic to reset the pinsetter.

To send the selected option to the scoring computers click "Set Configuration"

A-2 Control

This function is used to control non GS pinsetters without issuing the lanes. Common uses include turning on machines to set pin fall cameras, resetting pins after conditioning the lanes and turning lanes of for maintenance procedures. A-2 control functions can also be used on lanes that are issued. Refer to the figure titled *A-2 Control Window.*



A-2 Control Window

(1) Lane - Select which lanes will be affected.

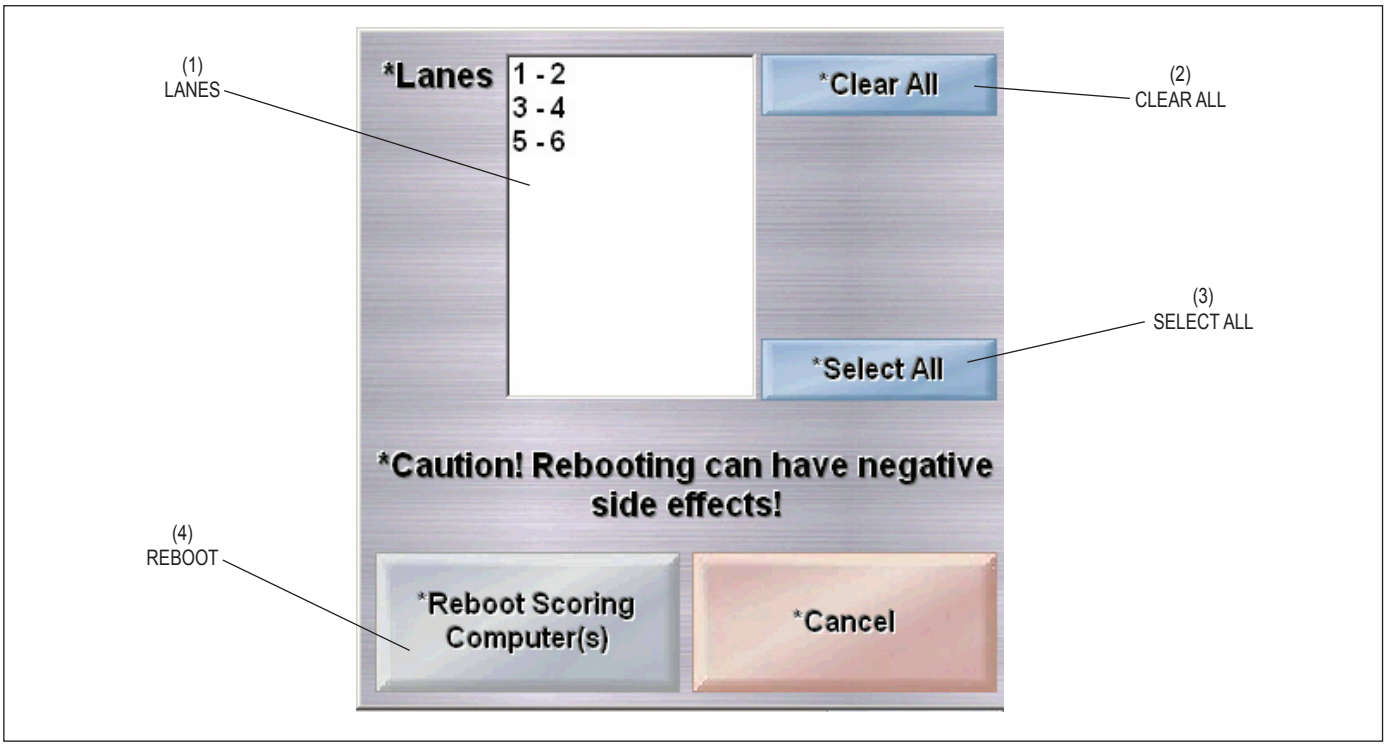
(2) Start - The "Start" button is used to turn on the pinsetters on the selected lanes.

(3) Stop - The "Stop" button is used to turn off the pinsetters on the selected lanes.

(4) Reset - The "Reset" button is used to cycle the pinsetters on the selected lanes. The reset function is the same as the reset button found on the ball return.

Reboot

The reboot function allows the score computers to be remotely rebooted. Rebooting a computer will cause it to save all of its files, shut down and automatically restart. Rebooting is a part of the suggested procedures for your system that should be performed on a daily basis. Refer to figure titled Scoring Computer Reboot.



Scoring Computer Reboot

(1) Lanes - Entry box used to select the lane or lane range for the scoring computers to be rebooted.

(2) Clear All - This button causes clears the entries from the Lanes box.

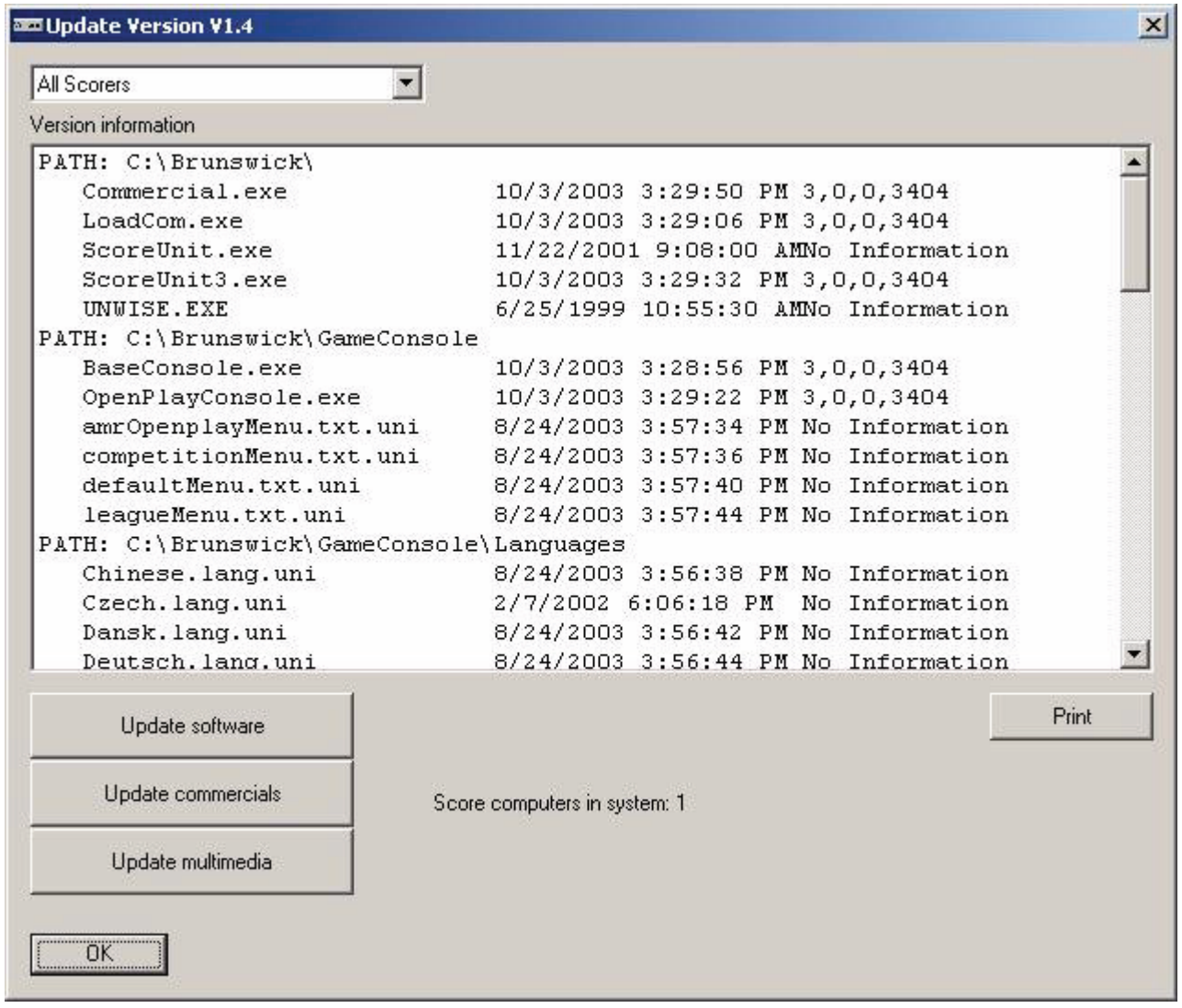
(3) Select All - This button adds all lanes (Scoring Computers) to the Lanes box.

(4) Reboot - This button causes Scoring Computers for the lanes entered in the Lanes box to reboot.

Updating Scorer Software

The Scorer Update icon located on the Windows desktop of the server computer, allows the management to install new scoring computer software, update the commercial advertisements and/or update the exciter graphics and sounds.

Updates may be sent to individual scoring computers or to all scoring computers at the same time. Software, commercial advertisements and scorer exciter graphics and sounds must be updated as separate steps. The update function also displays information about the versions of the software currently installed on the scoring computers. This information is helpful when troubleshooting the system with a Brunswick Customer Response Center representative. Refer to figure titled *Update Window.*


Update Version V1.4
All Scorers
Version information
PATH: C:\Brunswick\
Commercial.exe 10/3/2003 3:29:50 PM 3,0,0,3404
LoadCom.exe 10/3/2003 3:29:06 PM 3,0,0,3404
ScoreUnit.exe 11/22/2001 9:08:00 AMNo Information
ScoreUnit3.exe 10/3/2003 3:29:32 PM 3,0,0,3404
UNWISE.EXE 6/25/1999 10:55:30 AMNo Information
PATH: C:\Brunswick\GameConsole
BaseConsole.exe 10/3/2003 3:28:56 PM 3,0,0,3404
OpenPlayConsole.exe 10/3/2003 3:29:22 PM 3,0,0,3404
amrOpenplayMenu.txt.uni 8/24/2003 3:57:34 PM No Information
competitionMenu.txt.uni 8/24/2003 3:57:36 PM No Information
defaultMenu.txt.uni 8/24/2003 3:57:40 PM No Information
leagueMenu.txt.uni 8/24/2003 3:57:44 PM No Information
PATH: C:\Brunswick\GameConsole\Languages
Chinese.lang.uni 8/24/2003 3:56:38 PM No Information
Czech.lang.uni 2/7/2002 6:06:18 PM No Information
Dansk.lang.uni 8/24/2003 3:56:42 PM No Information
Deutsch.lang.uni 8/24/2003 3:56:44 PM No Information
Update software
Update commercials
Update multimedia
Print
Score computers in system: 1
OK

Update Window

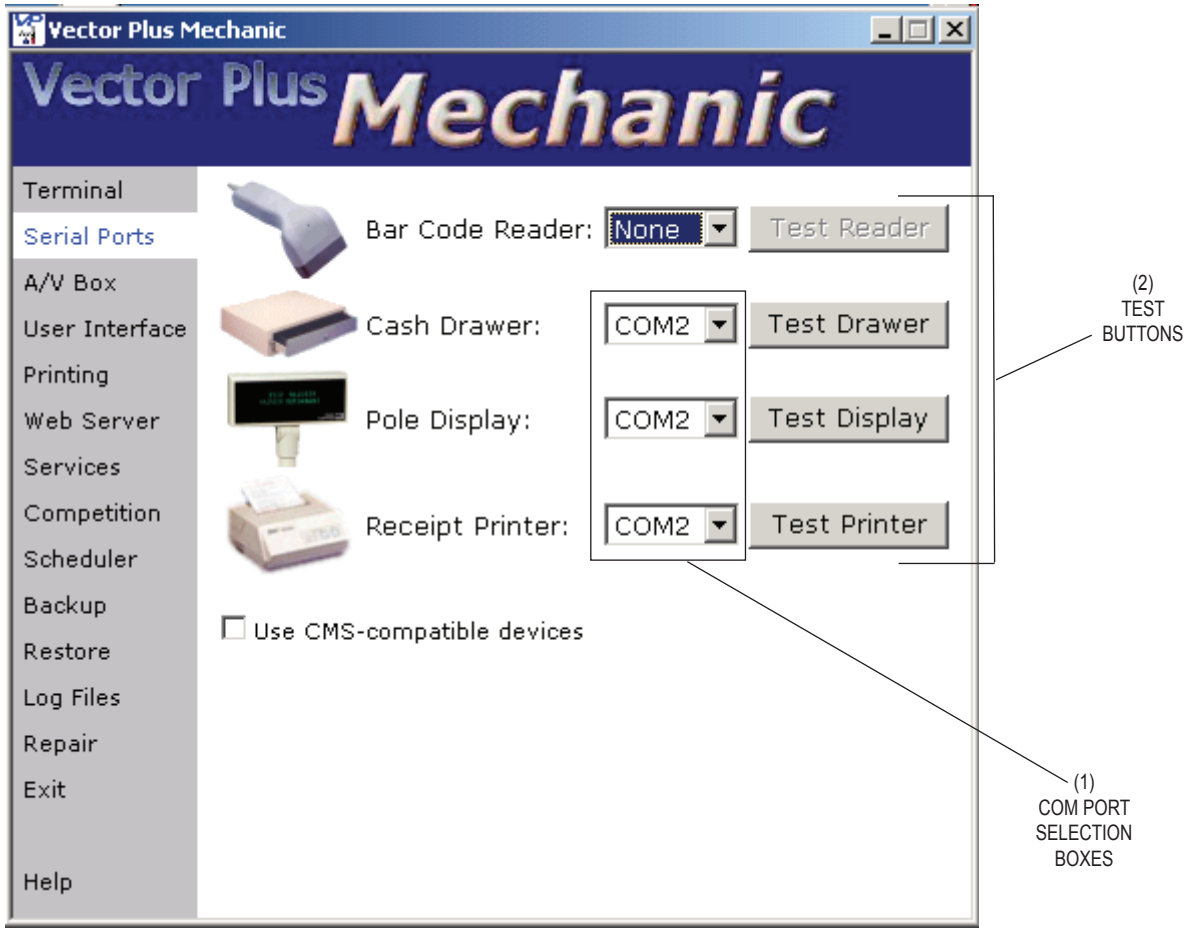
Updating Exciter Graphics and Sounds

1. Select the File menu.
2. Select the Update menu item.
3. Using the drop down menu at the top of the screen, select the scoring computer to be updated, or select “All” to update the software in all of the scoring computers.
4. Select the “Update Multimedia” button.
5. While the exciter graphics and sounds are being updated, the system will display a download status indicator.
6. When completed, select the “OK” button.
7. Follow the steps to reboot the scoring computer or computers that have been updated.

NOTE:
This may process may take 10-15 minutes per scoring computer.

Vector Plus Mechanic

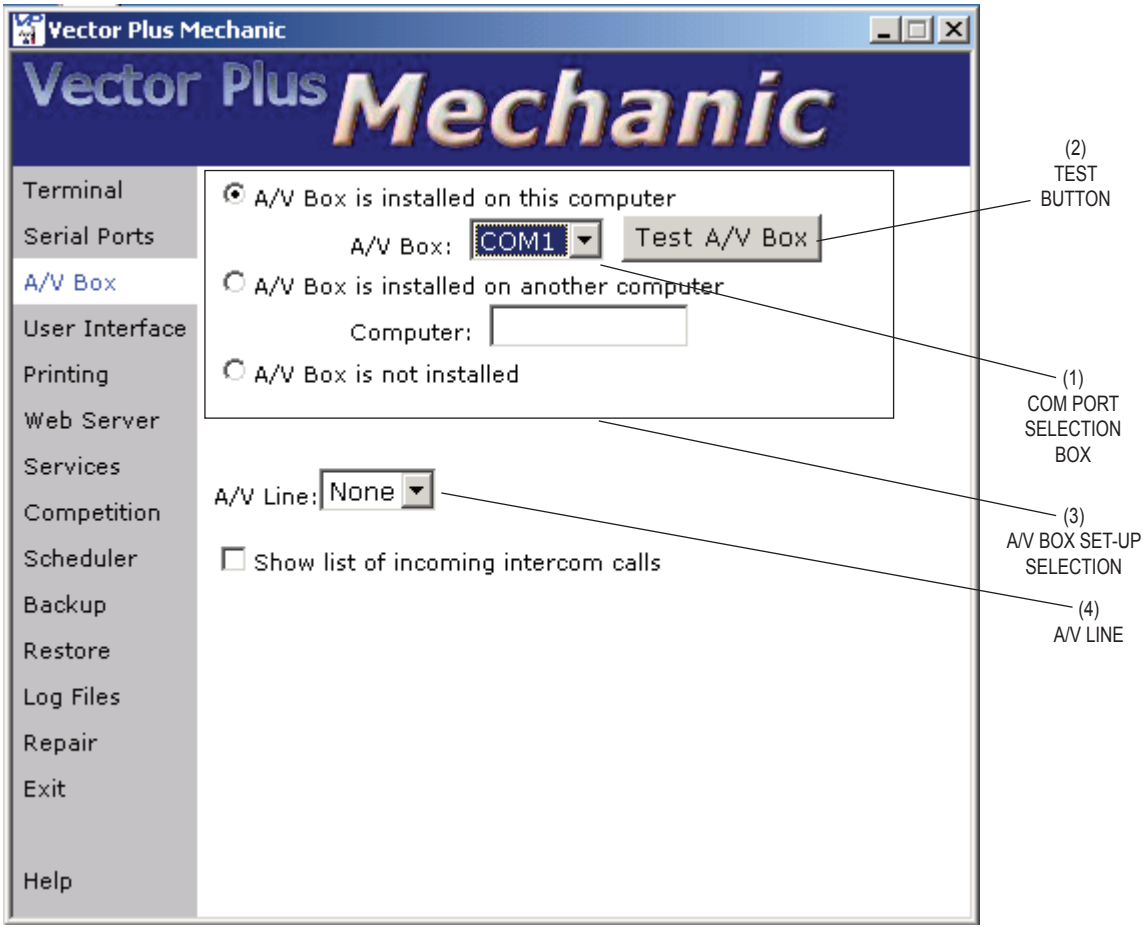
The Vector Plus Mechanic icon located on the Windows desktop of the server computer, allows Brunswick to configure the Vector Plus system. Most of the settings in the program should only be accessed with the guidance of a Brunswick Tech. Two screens, however, can be useful to the center in verifying the function and cabling to the pole display, cash drawer, receipt printer, and A/V box. Refer to the figures titled *Serial Ports Screen and A/V Box Screen.*



Serial Ports Screen

(1) Com Port Selection Boxes - Drop down box used to select the com port assigned to the device. Normally the bar code reader is assigned to Com3, while the cash drawer, pole display, and receipt printer are assigned to Com2.

(2) Test Buttons - Click on the appropriate button to check the connection and function of a device. An on-screen message indicates how the device will react.



A/V Box Screen

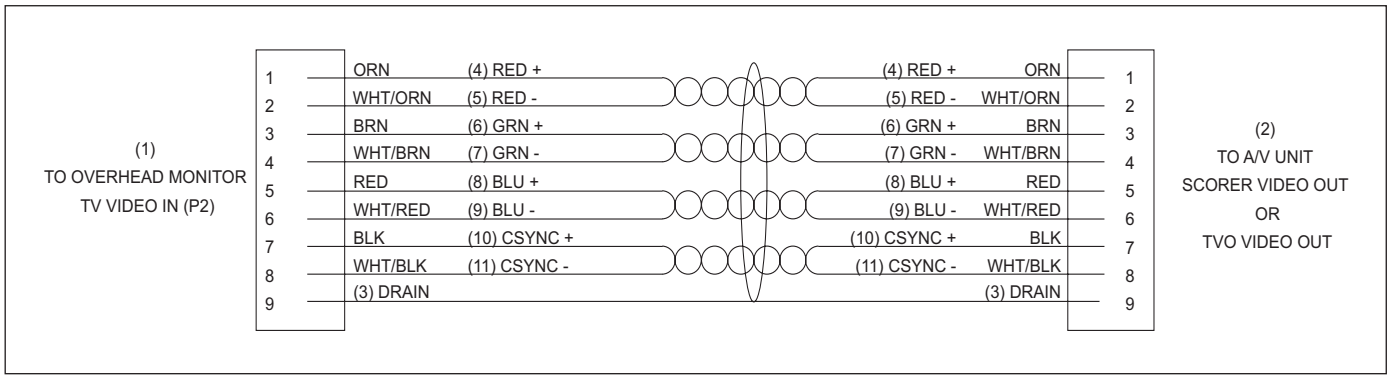
(1) Com Port Selection Box - Drop down box used to select the com port assigned to the A/V box when the A/V box is directly attached to the computer. Normally the A/V box is assigned to Com1.

(2) Test Button - Click on the button to check the connection and function of the A/V box if it is directly connected to the computer.

(3) A/V Box Set-up Selection - This area allows the user to select if an A/V box is used by the terminal and to what computer it is connected. If the A/V box is attached to a different computer, you must enter the name of the computer in the entry box. (I.E. Client1 , Client2 ..)

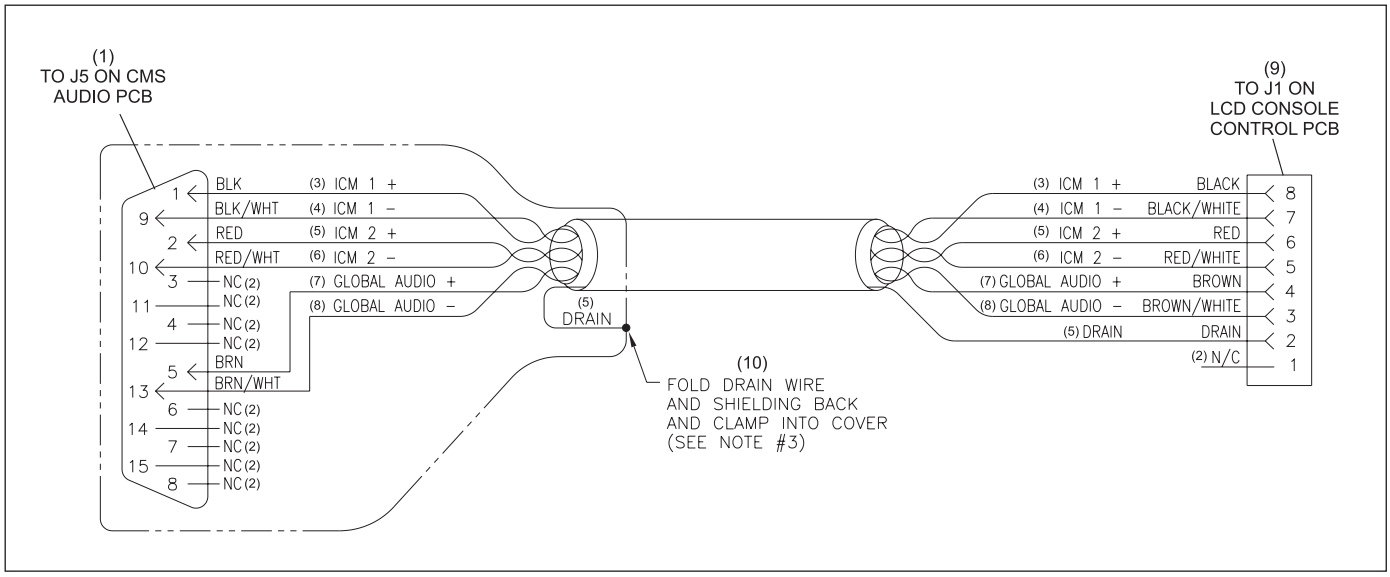
(4) A/V Line - Drop down box used to select the handset line used by the terminal This number will correspond with the connector number that the handset is attached to at the back of the A/V box. For the Vector system only lines 1 and 2 are active.

Cable Diagrams


(1)
TO OVERHEAD MONITOR
TV VIDEO IN (P2)
1 ORN (4) RED +
2 WHT/ORN (5) RED -
3 BRN (6) GRN +
4 WHT/BRN (7) GRN -
5 RED (8) BLU +
6 WHT/RED (9) BLU -
7 BLK (10) CSYNC +
8 WHT/BLK (11) CSYNC -
9 (3) DRAIN
(4) RED + ORN 1
(5) RED - WHT/ORN 2
(6) GRN + BRN 3
(7) GRN - WHT/BRN 4
(8) BLU + RED 5
(9) BLU - WHT/RED 6
(10) CSYNC + BLK 7
(11) CSYNC - WHT/BLK 8
(3) DRAIN 9
(2)
TO A/V UNIT
SCORER VIDEO OUT
OR
TVO VIDEO OUT

Primary Console Global Video from Control Desk (Part No. 57-300004-000)

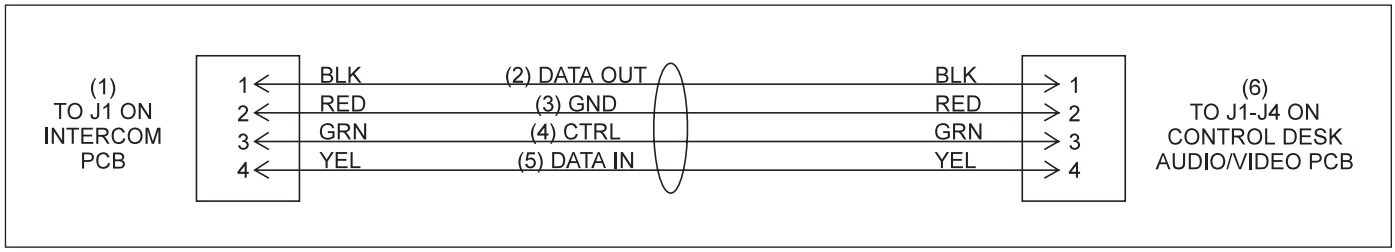
(1) TO OVERHEAD MONITOR TV VIDEO IN (P2)
(2) TO AUDIO VIDEO UNIT SCORER VIDEO OUT OR TV ONLY VIDEO OUT
(3) DRAIN
(4) RED +
(5) RED -
(6) GREEN +
(7) GREEN -
(8) BLUE +
(9) BLUE -
(10) COLOR SYNCHRONIZED +
(11) COLOR SYNCHRONIZED -



Global Control Desk to First Scorer Audio (Part No. 57-301125-000)

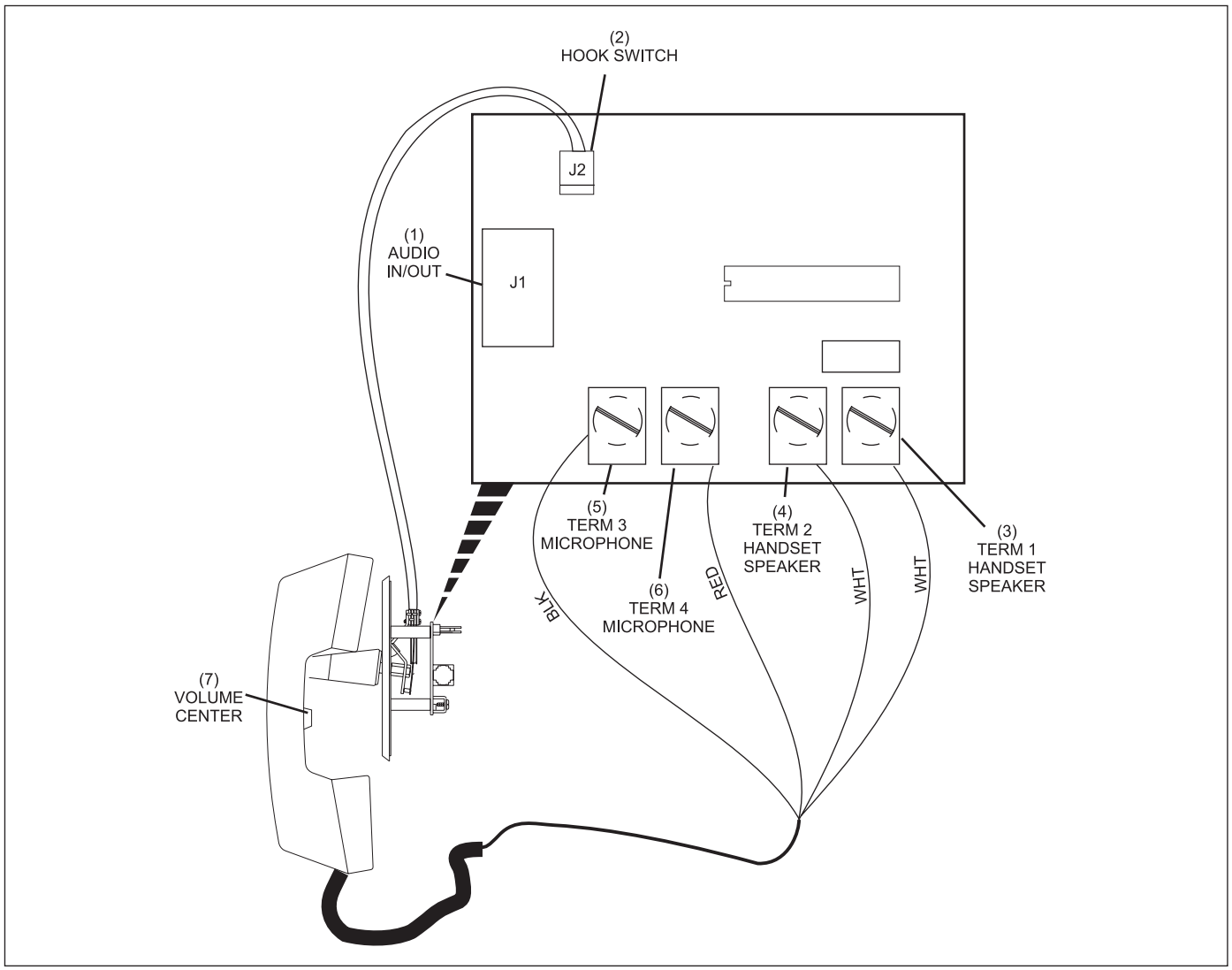
(1) TO J5 ON CMS AUDIO PCB
(2) NO CONNECTION
(3) INTERCOM 1 +
(4) INTERCOM 1 -
(5) INTERCOM 2+
(6) INTERCOM 2-
(7) GLOBAL AUDIO +
(8) GLOBAL AUDIO -
(9) TO JI ON LCD CONSOLE CONTROL PCB
(10) FOLD DRAIN WIRE AND SHIELDING BACK AND CLAMP INTO COVER (SEE NOTE 3)

BRN=BROWN, BLK= BLACK, RED=RED, ORN=ORANGE, YEL=YELLOW, GRN=GROUND, BLU=BLUE, VIO=VIOLET, GRY=GREY,



Intercom to Control Desk Audio/Video (Part No. 57-300132-000)

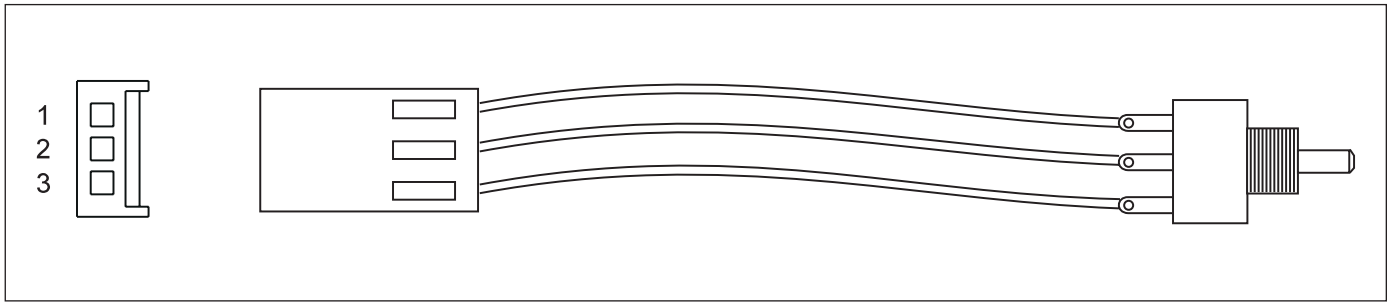
(1) TO J1 ON INTERCOM PRINTED CIRCUIT BOARD
(2) DATA OUT
(3) GROUND
(4) CONTROL
(5) DATA IN
(6) TO J1-J4 ON CONTROL DESK AUDIO/VIDEO PRINTED CIRCUIT BOARD



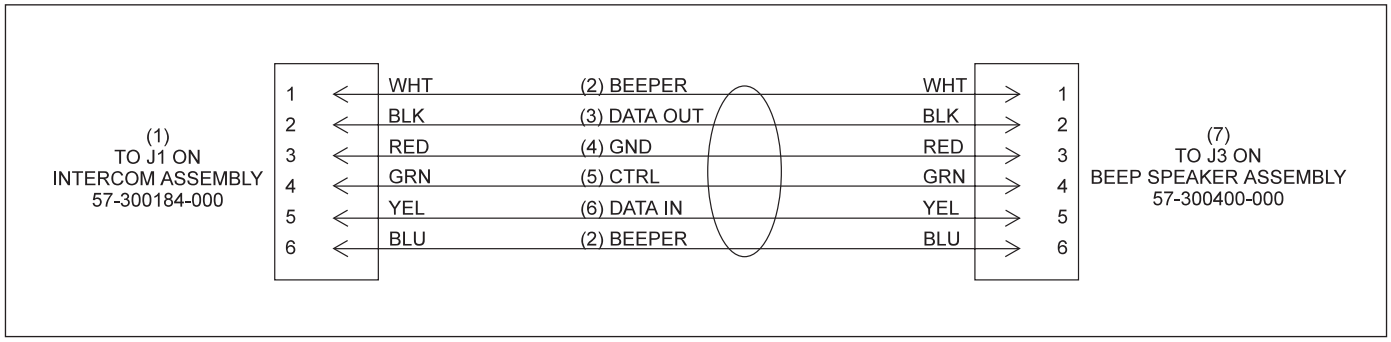
Handset Interface PCB (Part No. 57-300183-000)

(1) AUDIO IN/OUT
(2) HOOK SWITCH
(3) TERM 1 HANDSET SPEAKER
(4) TERM 2 HANDSET SPEAKER
(5) TERM 3 MICROPHONE
(6) TERM 4 MICROPHONE
(7) VOLUME CENTER

BRN=BROWN, BLK= BLACK, RED=RED, ORN=ORANGE, YEL=YELLOW, GRN=GROUND, BLU=BLUE, VIO=VIOLET, GRY=GREY,

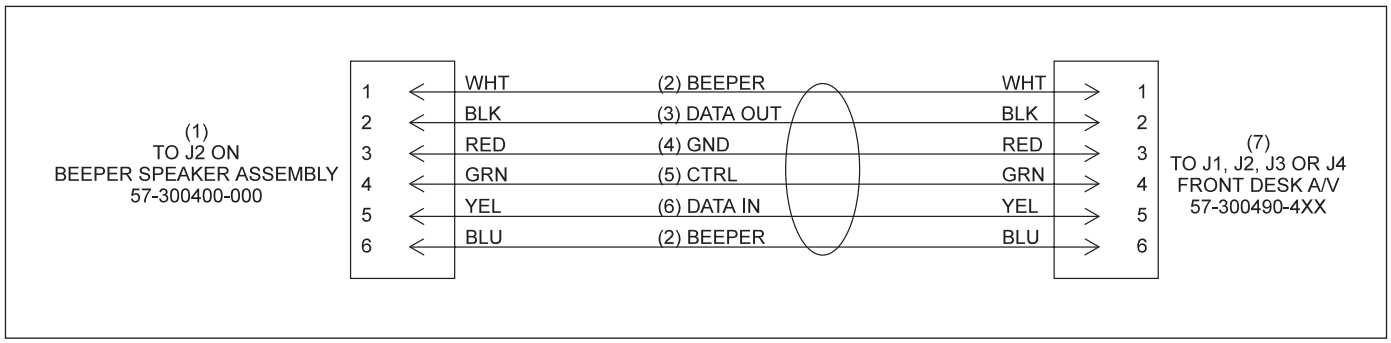


Potentiometer CMS Audio/Video Enclosed (Part No. 57-300306-000)



Beep Speaker to Intercom Cable Assembly (Part No. 57-300488-000)

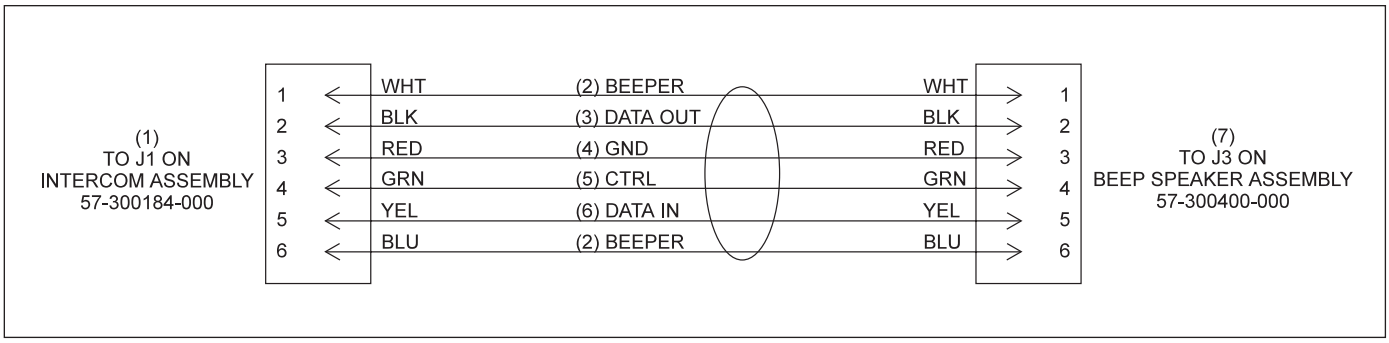
(1) TO J1 ON INTERCOM ASSEMBLY 57-300184-000
(2) BEEPER
(3) DATA OUT
(4) GROUND
(5) CONTROL
(6) DATA IN
(7) TO J3 ON BEEP SPEAKER ASSEMBLY 57-300400-000


(1)
TO J2 ON
BEEPER SPEAKER ASSEMBLY
57-300400-000
1 WHT (2) BEEPER WHT 1
2 BLK (3) DATA OUT BLK 2
3 RED (4) GND RED 3
4 GRN (5) CTRL GRN 4
5 YEL (6) DATA IN YEL 5
6 BLU (2) BEEPER BLU 6
(7)
TO J1, J2, J3 OR J4
FRONT DESK A/V
57-300490-4XX

Beep Speaker to Front Desk Audio/Video (F/A) Cable Assembly (Part No. 57-300489-000)

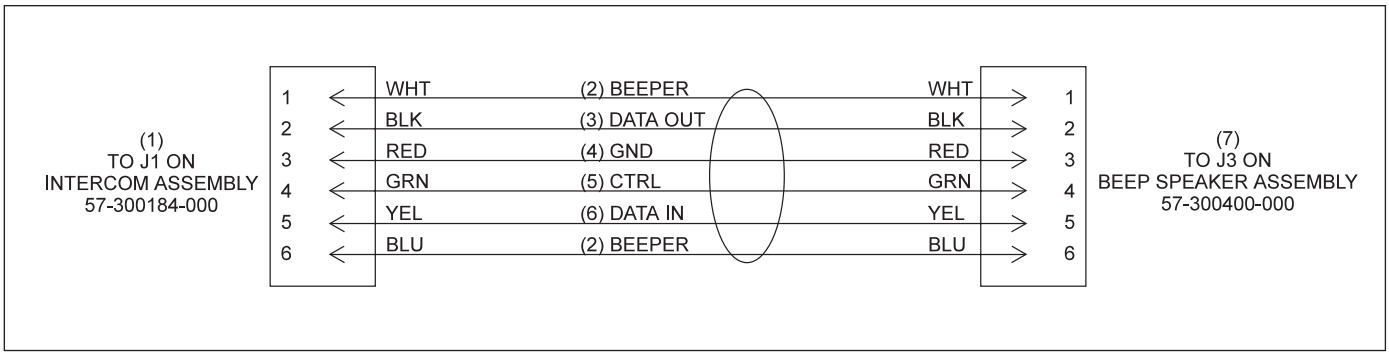
(1) TO J2 ON BEEPER SPEAKER ASSEMBLY 57-300400-000
(2) BEEPER
(3) DATA OUT
(4) GROUND
(5) CONTROL
(6) DATA IN
(7) TO J1, J2, J3 OR J4 FRONT DESK A/V 57-300490-4XX

BRN=BROWN, BLK= BLACK, RED=RED, ORN=ORANGE, YEL=YELLOW, GRN=GROUND, BLU=BLUE, VIO=VIOLET, GRY=GREY,



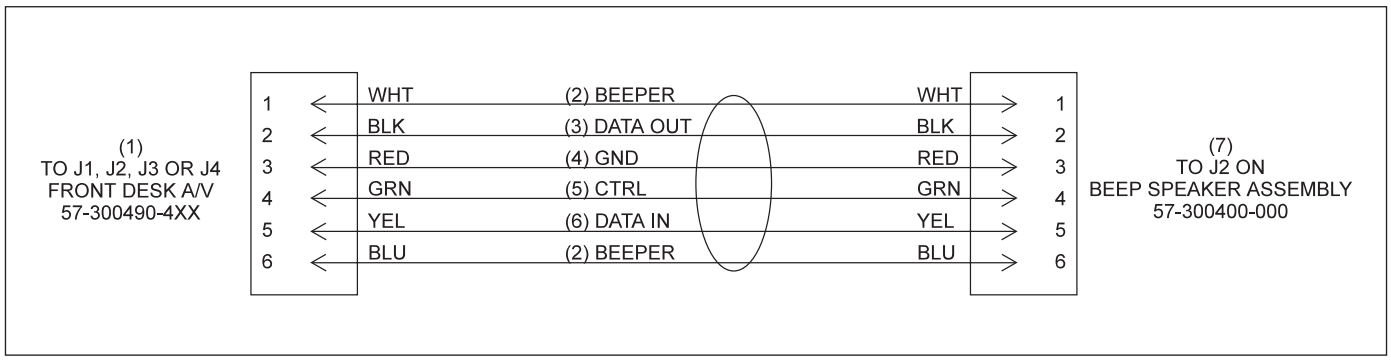
Beep Speaker to Intercom, Short (12 in.) Cable Assembly (Part No. 57-300498-000)

(1) TO J1 ON INTERCOM ASSEMBLY 57-300184-000
(2) BEEPER
(3) DATA OUT
(4) GROUND
(5) CONTROL
(6) DATA IN
(7) TO J3 ON BEEP SPEAKER ASSEMBLY 57-300400-000



Beep Speaker to Intercom, Long (15 ft.) Cable Assembly (Part No. 57-300499-000)

(1) TO J1 ON INTERCOM ASSEMBLY 57-300184-000
(2) BEEPER
(3) DATA OUT
(4) GROUND
(5) CONTROL
(6) DATA IN
(7) TO J3 ON BEEP SPEAKER ASSEMBLY 57-300400-000



Beep Speaker to Front Desk A/V (35') Cable Assembly (Part No. 57-300500-000)

(1) TO J1 ON INTERCOM ASSEMBLY 57-300184-000
(2) BEEPER
(3) DATA OUT
(4) GROUND
(5) CONTROL
(6) DATA IN
(7) TO J3 ON BEEP SPEAKER ASSEMBLY 57-300400-000

BRN=BROWN, BLK= BLACK, RED=RED, ORN=ORANGE, YEL=YELLOW, GRN=GROUND, BLU=BLUE, VIO=VIOLET, GRY=GREY,

Intentionally Blank